Varazdin Development and Entrepreneurship Agency
in cooperation with
University North, Croatia
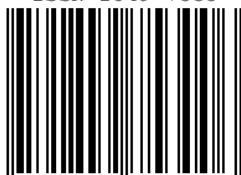**Faculty of Management University of Warsaw, Poland**

Economic and Social Development

28th International Scientific Conference on Economic and Social Development

Editors:
Mislav Ante Omazic, Vlasta Roska, Aleksandra Grobelna

Book of Proceedings

Paris, 19-20 April 2018

Editors:
Mislav Ante Omazic, Vlasta Roska, Aleksandra Grobelna

Economic and Social Development

28th International Scientific Conference on Economic and Social Development

Book of Proceedings

Paris, 19-20 April 2018

CONTENTS

MYTHS ABOUT DISABILITY: A LITERATURE REVIEW

Ambuj Sharma
PhD Student, Szent Istvan University, Hungary
ambujrc@hotmail.com

ABSTRACT
Over the past several decades, people with disabilities have been the victims of social, economic, and political barriers which limit their full participation in society. The objective of this article to identify the "myths" associated with disability and how for years these myths have served as barriers to isolate and discriminate people with disabilities within their communities. This study discusses common myths of disabilty, that emerge repeatedly, in society and the workplace. The findings present "myths versus facts" based on international literature review, (a) highlights historical, sociological, and philosophical myths in our society, and (b) illustrate myths that guides employers beliefs towards employees with disabilities and which may have a detrimental effect on the participation of later in labour market. This article should be of interest to teachers, professors, parents, policy makers, educational researchers, employers, human resource experts and students, The author also hope that this study may help to overcome the misconceptions that are perpetuated about the individuals with disabilities. Finally, the paper provides directions for future research.
Keywords: Beliefs, disability, myths, people with disabilities, stigma

1. INTRODUCTION

People with disabilities are often portrayed as "objects of pity", "problems to be fixed", "special", "burden" and such representation in society leads to negative myths and stereotypes (United Nations, 2014). People in society are frequently expected to abide by social, cultural and religious norms, and certain groups of people impose their beliefs on others. Such 'forced' and 'selfish' beliefs have detrimental consequences for society and we, as citizens of the world, need to build the societies stable enough where all the people are treated equally regardless of race, religion, gender and disability. People respond or display behavior what they believe to be true and in most cases misunderstood statements or quoted out of context may lead to stigma, prejudice and stereotypes. Many international communities have realized the necessity of addressing stereotypes and prejudices associated with disability and working together aiming to remove barriers which slows down the inclusion of people with disabilities. The chapter begins by defining key term, Myths. In next two sections that follow, the author presents methodology used for data collection and results. In concluding section, future research recommendations are put forward. To be able to conduct a research on the relationship between 'myths' and 'disability' and impact of their relationship on the integration of people with disabilities in society, the author decided to first define the term 'myth/myths' and also cite understanding of other researchers in this study. Although international literature is full of definitions and disciplinary work of other accomplished authors but few are discussed below:

- Myths are an important source of meaning, even in modem societies. They provide analogies which help make sense of events and provide simplifications of a more complex reality. Myths have a moral component, speaking of good and evil or simply providing object lessons. Because they are well known in a community they provide shared rationales to behave in common ways (De Neufville, Barton, 1987, p.182).
- "Myth" refers to colorful stories that tell about the origins of humans and the cosmos. Attitudes towards myth vary greatly. Some regard it as a source of spiritual growth, while others see only falsehood. Some see in myth the distinct character of particular cultures,

while others see universal patterns. Some regard myth as "contemporary" and "alive", while others think of it as "ancient" and/or "dead." (Gregory Schrempp cited in Magoulick, n. d.).

- A popular belief or tradition that has grown up around something or someone; especially: one embodying the ideals and institutions of a society or segment of society (Merriam-Webster, n. d.).
- Myths are prose narratives which, in the society in which they are told, are considered to be truthful accounts of what happened in the remote past. They are accepted on faith; they are taught to be believed; and they can be cited as authority in answer to ignorance, doubt and disbelief (Bascom, 1965, p.4).

The author in this literature review plans to examine the relationship between disability and myths. The objective of this study to illustrate myths regarding disability in society and the place of work. The author also aim to identify the gaps in existing international literature and would suggest directions for future research.

2. METHODOLOGY
The author relied on quantitative and qualitative literature to investigate myths about disability. The process for identifying research material to collect quality articles on disability began with a search on Google and electronic databases, for example, SCOPUS, Web of Science , JSTOR, ERIC, Google Scholar, etc. The main keyword 'disability' was combined each time with the following terms, such as 'myths', 'employer', 'employee with disabilities', 'individuals with disabilities', 'society', 'karma', 'attitudes', 'workers with disabilities'. For additional references and material, relevant books, literature reports, international journals were hand-searched.

3. RESULTS AND DISCUSSION
There are many myths about disabilities. The author present here just a few of them that can constitute barriers for persons with disabilities and also justifies with factual information which includes practical examples and statistics. This section is divided into sub-heading: (a) Myth versus facts: society and people with disabilities, and (b) Myth versus facts: employment and people with disabilities.

4. MYTH VERSUS FACTS: SOCIETY AND PEOPLE WITH DISABILITIES
In all the regions of the world, disability is associated with negative perceptions and people with disabilities face barriers to live an active life, rather have impact on all aspects of the lives (United Nations, n. d.).

4.1. Stereotypes and Social Labels
Media and e-source platforms spreads positive and negative views about people with disabilities. In context to stereotypes, such generalizations not only has a strong impact on people but also it reinforces beliefs, myths and or inaccurate assumptions about people with disabilities, for example, people with visual disabilities acquire a "sixth sense" (Easterseals, 2017), persons with mental/intellectual disabilities make them appear "unintelligent", "weird", "unpredictable" and "dangerous" (United Nations, 2014), all persons who have visual disabilities are great musicians or have a keener sense of smell and hearing (Carlton University, 2017), persons with disabilities as somehow "superhuman" or "heroes" (United Nations, 2014), Persons with disabilities are "special" (United Nations, 2014), People with disabilities are sick and in constant pain (Wynn, n. d.). The media usually paint positive image of people with disabilities by portraying them as "superhumans". People with disabilities are presented as the individuals who have overcome many personal, financial and professional obstacles, therefore,

assumed as "heroes" (United Nations, 2014). The word, "special" is used for people who do not fit into boxes they are used (Johnson, 2016), predefined social stratification or an 'anomalous' body that is constructed as distant from the norm (McLaughlin, Coleman-Fountain, 2014). This word often being used to address people with disabilities and not necessarily taken in positive sense as it may lead to marginalization (United Nations, 2014).

4.2. Religious and Cultural Beliefs
From a historical point of view, literature is full of examples where people with disabilities have been victim of social factors (such as ignorance, neglect, superstition and fear) and such treatment have led to marginalization and isolation (Munyi, 2012). Our society for ages for ages have been responsible for relating disability possessed by person to his/her past deeds (Pfeiffer, 1994). The actual cause is confused with Karma which further leads to incorrect assumptions and stigma. The ideology of Karma has also been associated with disability where it is believed that disability is caused by individuals sins of past lives (Schuelka, 2013). In Nigeria, common beliefs about the causes of disability include a curse from God; ancestral violations of societal norms; offenses against the gods of the land; breaking laws and family sins; misfortune; witches and wizards; and adultery, among others (Eskay et al, 2012 cited in United Nations, n. d., p.5).

4.3. Burden to Society
There is myth that people with no disabilities are obliged to "take care of" people with disabilities (Easterseals, 2017) and often portrayed as a burden—to society, to family, to friends (United Nations, 2014). People with disabilities, like other people, are human beings. People with disabilities go to school, get married, work, have families, do laundry, grocery shop, laugh, cry, pay taxes, get angry, have prejudices, vote, plan and dream like everyone else (Easterseals, 2017). We all are not perfect and need help on some occasion, including people with disabilities (ILO, n. d.).

5. MYTH VERSUS FACTS: EMPLOYMENT AND PEOPLE WITH DISABILITIES
To encourage people with disabilities to integrate into labour market, governmental and non-governmental organizations are developing strategies to benefit world's largest minority. Strategies, initiated by public and private corporations, to improve the employment prospects of persons with disabilities are being implemented worldwide, for example (United Nations, 2016):
- Government initiatives: anti-discrimination laws, technical vocational education and training programmes, wage subsidies, supported employment, workplace accommodation schemes, workers compensation, quota systems, sheltered workshops.
- Private sector Initiatives: employer networks, disability-inclusive business, social enterprises.

5.1. Individuals with Disabilities do not have the Right Skills for Business
This is another myth which impacts the full participation of people with disabilities in job market. The selection of an individual for advertised job profile and delegation of responsibilities should be based on qualification, skills and job description, not based on their disability. The job description and required skills should match otherwise leads to frustration or chaos, for example, a blind person would not match the job description of airplane pilot. The secret mantra for every human resource managers and immediate line managers to keep in mind that certain jobs may be better suited to some than to others (Goldstein, Winkler, Chun, 1995, cited in MCSC, 2017).

5.2. Accommodation is too Expensive.

In the workplace, the physical environment (ramps, elevators, and separate toilet facilities), accessibility information (clear signage) and devices (computers equipped with software to assist people with sensory disabilities) can be barriers for people with disabilities to gain decent employment (United Nations, 2016). There are some business myths that changes in physical, technological and communication accommodations are challenging, expensive and time consuming procedure. Employees with disabilities require no special or minimum accommodations, but all dependent on severity and type of disability. The cost of providing reasonable accommodation could be minimal or much lower than many employers believe (Goldstein, Winkler, Chun, 1995, cited in MCSC, 2017). This can be supported by citing an example of Studies by the President's Committee's Job Accommodation Network. The findings have shown that 15 percent of accommodations cost nothing, 51 percent cost between $1 and $500, 12 percent cost between $501 and $1,000, and 22 percent cost more than $1,000 (Goldstein, Winkler, Chun, 1995, cited in MCSC, 2017). Another study by Hernandez et al. (2008) confirms that cost of accommodating employees with disabilities are usually low and minimal. There are two ways where government can support employers in reducing accommodation costs for making workplaces more accessible to persons with disabilities (United Nations, 2016):

- By offering tax breaks or tax credits to the employers for expenditures undertaken to make such adjustments.
- By providing full or partial funds for reasonable accommodations for employees with disabilities.

5.3. Co-Workers will be uncomfortable around People with Disabilities

Workers with disabilities have a good influence on managers and peers, and brings additional diversity into the workplace (Goldstein, Winkler, Chun, 1995, cited in MCSC, 2017). Recruiting individuals with disabilities helps the other workers to be more accommodating and display accepting behavior which sends positive message within the organization (Hernandez et al., 2008). It is the duty of an employer to provide disability training to all employees. Educating employees about disability can help in removing social prejudices and also helps in improving work culture. Most of the times it has been reported that many co-workers are less willing to interact with employees with disabilities as they afraid of saying something offensive or they simply don't know how to act or what to say (Guerin, 2017).

5.4. Employees with Disabilities have a Higher Absentee Rate than Employees without Disabilities

Many studies have highlighted this misconception in their research, for example a study by Dupont presented some interesting facts. It was stated in the report that employees with disabilities are not absent any more than employees without disabilities (Goldstein, Winkler, Chun, 1995, cited in MCSC, 2017).

5.5. Employing People with Disabilities will Adversely Affect Businesses' Bottom Line

Employers worldwide are recognizing the importance of being an active player in building their corporate image in context to corporate social responsibility (CSR) and this approach also helps them in strengthening their customer base (Unger, 2002a). Major concerns of managers in hiring and working with employee with disabilities are increase in supervisory time and compromise on productivity (Hernandez et al., 2008).

Many studies shows that employees with disabilities show loyal behavior and employee turnover is less as compared to employees without disabilities. There is an advantage for hiring people with disabilities as its cost effective for companies as they save money on hiring and

training of new employees (Bajpai, 2015). A study by Unger(2002b) on perceptions of front-line supervisors towards employees with disabilities showed that these immediate supervisors were quite satisfied with the work performance and described these workers as conscientious, consistent, dependable, and prompt employees. Another concern for managers, especially in service industry, is customers perception towards employees with disabilities. A study by Groschl (2007) shows that travelers with disabilities show interests in hotels which promote diverse hiring practices and encourage recruitment of people of disabilities.

5.6. Once Hired by an Employer, Employees with Disabilities can't be Sacked
There are laws in place that serve to protect the rights of individuals with disabilities like other people and there are no special legal procedures for people with disabilities (Goldstein, Winkler, Chun, 1995, cited in MCSC, 2017). In For example, The Americans with Disabilities Act (ADA) which is a federal law protects the right of people disabilities in America and provide guidelines for employers. According to ADA, employer has a right to let go of employee with disabilities such as the termination is unrelated to the disability, or the employee does not meet legitimate requirements for the job, or a direct threat to health or safety in the workplace due the employee's disability (ODEP, n. d.).

5.7. Worker's Compensation Rates Dilemma for Employers
There is another disbelief in many enterprises regarding the worker's compensation in context to people with disabilities. Many employers feel that they have to pay additional amount while applying for insurance if they hire individuals with disabilities. Employers need to have a very clear understanding that insurance premiums are based solely on the dangers at work place and the organization's accident history and not based on the fact if workers have disabilities (Goldstein, Winkler, Chun, 1995, cited in MCSC, 2017).

5.8. Better Work Performance By People with no Disabilities
It is assumed that people with disabilities cannot match performance standards of other colleagues and such professional perceptions leads to marginalization but also affect the self-esteem of workers with disabilities. International literature is full of examples citing the work place performance discrepancies, for example DuPont conducted a survey in 1990, 811 employees with disabilities and found 90 percent rated average or better in job performance compared to 95 percent for employees without disabilities (Goldstein, Winkler, Chun, 1995, cited in MCSC, 2017). To summarize, the ability of a worker with a disability does not depend solely depends on his/her impairments but there are other personal, organizational and external variables which impact performance at work. For example, factors like individual attributes of a worker, attitudes of employers, labor market situation and workplace accommodations can impose limitations in jobs (Baldwin, Johnson, 2001). Human resource professionals or workplace personnel who have direct contact or first-hand experiences in working with employees with disabilities reported positive attitudes, but myths and misconceptions pertaining to the work capabilities or performance of individuals with disabilities arises only when immediate line managers or other peers are lack direct interaction with latter (Unger, 2002a; Unger, 2002b).

6. CONCLUSION
In this study, two inter-related socially-constructed scenarios are discussed. First, how society perceives the different dimensions of disability and what are the misconceptions associated with the phenomenon of disability. Secondly, discuses professional myths which cement negative perceptions of employers towards people with disabilities in the place of work. The author have tried to present realistic facts about disability and people with disabilities through extensive

literature review and hope to overcome the misconceptions that are perpetuated about people with disabilities. This paper managed to discuss some issues which marginalize and exclude individuals with disabilities in society but there are more relevant issues that need further exploration. Unfortunately, over the past several years, researchers have focused their research on variety of topics such as issues related to political and economical barriers in full participation of people with disabilities but publications covering cultural and social aspects in context to disability have not been published. Therefore, the author recommend further research on relationship between phenomenon of disability and culture, and to present findings from a multicultural perspective.

LITERATURE:
1. Bajpai, D. (2015). *Questionnaire on Factors in Employability of Persons with Disabilities in India*. Retrieved 25.12.2017 from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2666506**.**
2. Baldwin, M. L., W. G. Johnson (2001). *Dispelling the Myths about Work Disability*. Prepared for the 1998 IRRA Research Volume New Approaches to Disability in the Workplace. Retrieved 23.12.2017 from https://www.researchgate.net/profile/William_Johnson14/publication/245947184_Dispelling_the_Myths_about_Work_Disability/links/00b49533c8897e7527000000.pdf. [2017.
3. Bascom, W. (1965). *The Forms of Folklore: Prose Narratives*. [online]. Retrieved 22.12.2017 from: http://www.ucs.louisiana.edu/~jjl5766/share/Bascom_1965.pdf.
4. Carlton University (2017). *Common Myths About Disabilities*. [online]. Retrieved 23.12.2017 from https://carleton.ca/accessibility/common-myths-about-disabilities/
5. De Neufville, J. I., Barton S. E. (1987). Myths *and the Definition of Policy Problems: An Exploration of Home Ownership and Public-Private Partnerships*. [online]. Retrieved 11.12.2017 from http://eds.a.ebscohost.com/eds/pdfviewer/pdfviewer?vid=0&sid=1659a23f-d8d4-46b7-8c7a-b5ffd280aa88%40sessionmgr4009.
6. Easterseals (2017). *Myths and Facts About People with Disabilities*. [Online]. Retrieved 23.12.2017 from http://www.easterseals.com/explore-resources/facts-about-disability/myths-facts.html?referrer=http://www.cput.ac.za/blogs/disability/disability-awareness/myths-and-facts-about-people-with-disabilities-pwds/.
7. Groschl, S. 2007. *An exploration of HR policies and practices affecting the integration of persons with disabilities in the hotel industry in major Canadian tourism destinations*. *International Journal of Hospitality Management* 26 (3): 666-686.
8. Guerin, L. (2017). *Why You Should Provide Disability Training to Employees*. NOLO. [online]. Retrieved 25.12.2017 from https://www.nolo.com/legal-encyclopedia/why-you-should-provide-disability-training-to-employees.html.
9. Hernandez, B., McDonald, K., Divilbiss, M., Horin, E., Velcoff, J., Donoso, O. (2008). *Reflections from Employers on the Disabled Workforce: Focus Groups with Healthcare, Hospitality and Retail administrators. Employees Responsibilities and Rights Journal*, 20, pp.157–164.
10. ILO (n. d.). *Myths VS. Facts. Inclusion Makes Business Sense: Fact Sheet*. [online]. Retrieved 24.12.2017 from http://www.businessanddisability.org/images/pdf/factsheets/ilodisabilityfactsheets_myths_facts.pdf.
11. Johnson, M. (2016). *To Those Who Have Been Called 'Special' Because of a Disability*. [online]. Retrieved 24.12.2017 from https://themighty.com/2016/03/to-those-who-have-been-called-special-because-of-a-disability/.

12. Magoulick, M. (n. d.). *What is Myth?* Retrieved 22.12.2017 from https://faculty.gcsu.edu/custom-website/mary-magoulick/defmyth.htm.
13. MCSC (2017). *Myths, Misconceptions, and Realities Of Disability*. Michigan Community Service Commission. [online]. Retrieved 23.12.2017 from http://www.michigan.gov/mcsc/0,4608,7-137-8074_22503_23185-63417--,00.html.
14. McLaughlin, J., Coleman-Fountain, E. (2014). *The Unfinished Body: The Medical And Social Reshaping Of Disabled Young Bodies*. *Social Science & Medicine*, 120, pp. 76-84.
15. Merriam-Webster (n. d.). *Definition of Myth*. [online]. Retrieved 22.12.2017: https://www.merriam-webster.com/dictionary/myth.
16. Munyi, C. W. (2012). *Past and Present Perceptions Towards Disability: A Historical Perspective*. *Disabilities Studies Quarterly*. [online]. Retrieved 24.12.2017 from http://dsq-sds.org/article/view/3197/3068.
17. ODEP (n. d.). *Employers and the ADA: Myths and Facts*. Office of Disability Employment Policy. [Online]. Retrieved 24.12.2017 from https://www.dol.gov/odep/pubs/fact/ada.htm.
18. Pfeiffer, D. (1994). *Eugenics and Disability Discrimination.* [online]. Retrieved 21.12.2017 from https://www.independentliving.org/docs1/pfeiffe1.html.
19. Schuelka, M. J. (2013). *A Faith in Humanness: Disability, Religion and Development*, *Disability & Society*, 28 (4), pp. 500-513.
20. United Nations (2016)*. Disability at a Glance 2015: Strengthening Employment Prospects For Persons With Disabilities In Asia And The Pacific*. Economic and Social Commission for Asia and the Pacific. eISBN: 978-92-1-057799-1.
21. United Nations (2014). *The Convention on the Rights of Persons with Disabilities.* Training Guide. Professional Training Series No. 19. United Nations High Commissioner for Human Rights. eISBN-13: 978-92-1-056495-3.
22. United Nations (n. d.). *Culture, Beliefs, and Disability (Module 13).* Toolkit on Disability for Africa. [Online]. Retrieved 24.12.2017 from http://www.un.org/esa/socdev/documents/disability/Toolkit/Cultures-Beliefs-Disability.pdf.
23. Unger, D. D. (2002a). *Employers' Attitudes Towards People with Disabilities in the Workforce: Myths or Realities.* Employers' Views of Workplace Supports: Virginia Commonwealth University Charter Business Roundtable's National Study of Employers' Experiences with Workers with Disabilities. Edited by Darlene Unger et al., September 2002.
24. Unger, D. D. (2002b). *How Do Front-Line Supervisors in Business Perceive the Performance of Workers with Disabilities?* Employers' Views of Workplace Supports: Virginia Commonwealth University Charter Business Roundtable's National Study of Employers' Experiences with Workers with Disabilities, A Study Guide for Human Resource Managers. Edited by Jennifer Todd McDonough et al., May 2002, 23.
25. Wynn, M. (n. d.). *Myths and Misconceptions About Disability: Together We Rock*! Myths, stereotypes and stigma about disability are barriers to the realization of the human rights of people with disabilities. Disabled Peoples' International. [online]. Retrieved 24.12.2017 from http://www.markwynn.com/wp-content/uploads/Common-Myths-and-Misconceptions-about-Disability.pdf.

SOME ASPECTS OF THE FIRMS' STAKEHOLDERS RELATIONS AND THEIR PICTURE IN EU COUNTRIES

Iwona Dorota Czechowska
University of Lodz, Poland
idczechowska@uni.lodz.pl

Agnieszka Czajkowska
University of Lodz, Poland
agnieszka.czajkowska@uni.lodz.pl

Wojciech Zaton
University of Lodz, Poland
wojciech.zaton@uni.lodz.pl

ABSTRACT

The important conditions for sustainable development and a rapidly growing society are the right relations between the companies-producers or service providers and their various stakeholders, especially customers or employees. It is in the interest of all market participants to organize business operations, to legitimize the company's activities struggling for the trust of customers and the image of a high civilization standard company. In such circumstances, an interesting research problem related to business ethics arises - to explore mutual dependence between ethical behavior of companies, internal relations with employees and external with customers. The paper contains a brief literature review of the issue that makes the background for the empirical analysis. This analysis is based on the data for European Union countries derived from The Global Competitiveness Report database in the period of 2007-2017. The study shows the strong positive correlations between three important aspects of the firms' stakeholders relations: ethical behavior of firms toward other firms and institutions, labor-employer cooperation and customer-centric approach. However, the absolute level of these aspects is moderate in EU countries and significant differences are noticed between "old" (exhibiting higher scores) and "new" (presenting lower scores) EU countries. The worrisome occurrence is the overall lack of improvement over the last 10 years.
Keywords: *business ethics, customer orientation, ethical behaviour, labor-employer cooperation, The Global Competitiveness Report*

1. INTRODUCTION

With the changing expectations of customers and the growing competition, every organization needs to pay due attention to constant improvement of its products, services and processes. Business activity, focused on economic efficiency is accompanied by ethical norms and dilemmas. Ethics plays an important role in business. Gradually, also customers' satisfaction and their positive experience in the relations with companies are becoming important. A relationship between clients' satisfaction, their loyalty and a company's efficiency has been observed and these factors can modify the company image. Assessment of the company image depends on many factors, on the company's both external and internal relations. Customer orientation should not be seen merely as endeavour to meet customers' needs but also as acknowledgement by staff of those norms and values, which stress the primary role of the customer. Thus, customer orientation requires activity on different levels of company's functioning – not only in relations with clients and the staff, but also with external institutions. Relations with customers and staff, with competitors, as well as ethical assessment of those have been studied comprehensively (Kolb, 2008, pp. 216, 225; Velasquez, Velazquez, 2002;

Creyer, 1997, pp. 421-432; OECD, 2015). However, research into various aspects of ethical behaviour and their relationships is scarce. This research gap inspired us to analyse the topic and to conduct an empirical study. The main goal of the paper is to investigate the three kinds of the firm's stakeholders relations: ethical behavior of a firm towards other firms, institutions and politicians (variable 1), employer-employee relations (variable 2) and a firm's attitude to customers (variable 3). We assume that all variables change in the same direction, building a positive complex picture of the system of relations between all firm's stakeholders. We also test for possible differences for these variables between "old" and "new" European Union countries. The data used in the analysis come from the database of the Global Competitiveness Report developed by World Economic Forum. The paper is organized as follows. After the introductory section, Section 2 gives a theoretical background of the idea of business ethics in relations to a firm's main stakeholders: customers, employees, other companies and institutions. It also contains a brief literature review that makes the background for empirical analysis presented in Section 3. Finally, Section 4 concludes.

2. KEY ELEMENTS OF BUSINESS ETHICS, CUSTOMER ORIENTATION AND MANAGEMENT-STAFF RELATIONS

An important condition for sustainable development and quick social development is the right relations between businesses and service providers on the one hand and various stakeholders, such as customers and employees on the other. It is in the interest of all market participants that business activity be well organized, that the company's efforts to gain customers' trust are legitimate and that the company's image is of a high standard. In this context is seems interesting to study relationships between ethical business behaviour, management-staff relations and customer orientation. For business ethics it is important to answer why its principles ought to be adhered to and how its guidelines are justified. In this pragmatic field a very important goal is success achievement, often understood as improving performance in meeting long-term business objectives (Hansen, 1993, pp. 95-98). Considering the special character of business ethics, what is important is how particular organizations and their staffs perceive the sense of business (Czechowska, 2016, pp. 15). The aim should not be maximization of profits – contrary to the allegedly Friedman's saying 'the business of business is business' (Salomon, 1997, pp. 165-168). According to the current scientific discourse and considering the social aspect of business activity, a company's aim should be to realize interests of various stakeholders and in so doing to improve financial results in the long term. Within business ethics, an interesting research issue is the perspective on ethical issues and the question whether they are to be applied to legal entities such as company or corporation or simply to people (Gasparski, 2007, p. 191). This latter stance has been adopted by the authors of this study, who focus on the ethics of human subjects interacting with other subjects as participants of economic processes. Business ethics is usually understood as creating a system of norms and principles of behaviour referring to values commonly used in business activity (Crane, Matten, 2004, p. 8). An example of such regulations are ethical codes reflecting the so-called 'soft law' drawn up by occupational groups (Czechowska, 2015a, p. 98; Czechowska, 2015b, pp. 53-61; Czechowska, Zatoń, 2016, pp. 113-138), which understand the workings of a given trade better than the legislator with a specific political affiliation. Business ethics has room for both old classical principles and new ones being constantly created in the ever-changing economic reality. New circumstances and new situations produce new ethical dilemmas which outline new rules of right behaviour. Thanks to voluntary self-regulation and codes of conduct, pressure on particular companies can be increased so that they meet defined minimal ethical standards. It is important that information about such codes is accessible to the public, including consumers, who can refer to them. At the same time, non-adherence to ethical codes in EU law implemented in particular countries is regarded as misleading activity and unfair practice with

definite legal consequences. Directive 2005/29/WE defines an unfair market practice used by companies against consumers on the internal market as: various actions which are in contradiction with the requirements of due professional diligence (including advertising and marketing), which affect consumers' decisions, and which are aggressive and misleading (especially regarding information about prices) (Directive 2005/29/WE). In order to act rationally on the market, a consumer needs to be well-informed. Reliable information from producers or service providers allows consumers to refrain – in accordance with free market principles and business ethics – from entering into a disadvantageous contract. Thus, company activities in the field of ethics can be called a process of civilizing business and making it professional by conforming to the norms of the profession, observing praxeological rules and keeping ethical standards (Gasparski, 2007, pp. 174-175). The process also embraces company employees, whose ethical attitudes are shaped by in-service training and incentive schemes. To identify such attitudes anonymous questionnaires can be used, whereas relations with clients are evaluated with the help of the mystery shopping method (Hesselink, van Iwaarden, van der Wiele, 2004, pp. 529-541). The method is described as a tool used by market research companies, enforcement authorities or companies to gather specific information through 'secret shoppers/assessors'. The mystery shopping for the study on legal and commercial guarantees is aimed at replicating real consumers' experiences (European Commission, 2017, p. 25). The dynamic business environment, which includes competitive requirements and customers' expectations, induces companies to improve the quality of their products, services and processes. A customer becomes a valuable asset to a company (Kumar, 2010). The connection between customer's satisfaction, his loyalty and the firm's performance is visible (Brady, Cronin Jr., 2001, pp. 241-251). Companies make efforts to create long-lasting customer relationships, following the business strategy of customer orientation. Customer orientation is presented as observing the wishes and needs of the customer, anticipating them and then acting accordingly (Noordzij, 2013; Accounting dictionary, 2018). Customer orientation competence is connected with staff education and training in identifying customers' needs and predicting competitors' moves (Pawłowska, 2015, p. 174). Many authors point out the link between customer orientation and a company' efficiency (Tajeddini, Elg, Trueman, 2013, pp. 453-462), especially in the long term which helps them gain competitive advantage on the market. In customer relations emotions play a big role. Relational capital is created only where there is mutual trust, respect and understanding. The non-material aspect of building relations (Michalczuk, Widelska, 2011, pp. 168-169) is based on partnership or even emotional ties and the company's image is evaluated not only from the angle of external relations but also activities within the firm. Customer orientation should also be seen more widely as the recognition by the whole staff of the primary role of the customer (Heskett, Sasser, and Schlesinger, 2003, pp. 1-10). In firms, ethics refers to standards of correct behaviour, often established by the owner of the business, that members of the organization are expected to maintain when dealing with each other, customers, vendors and the community as a whole (Hill, 2018). Another important element in business ethics are relations between a firm and its staff. These relations are assessed by different stakeholders (Al-Noorachi, Stopczyński, 2015, p. 438). According to the generally accepted idea of social responsibility of business, members of staff should be treated fairly, honestly and justly. If a worker is humiliated or offended, such a practice is against the rules of ethical HR management (Munter, 2013, p. 174). The more a company cares for its employees, the more chances that they will get actively engaged in company operations. In a friendly environment staff expects to be treated with respect and understanding by their colleagues and superiors (Munter, 2013, pp. 174-188, Johnson, 2015). If relations between managers at all levels and their subordinates are based on full trust, they contribute to the company's efficiency (Jaworski, Kohli, 1993, pp. 53–70). The company's ethical culture does matter to its staff members. Conclusions of a report on staff loyalty say that if a company is perceived as highly

ethical, employees are several times more likely to stay on (Ethics Resource Center, 2012, p. 2). Through analysis of company ethical codes, types of relations with the staff can be identified. It can be established whether they are authoritarian and disciplinary – with the predominance of do's and don'ts and words like 'is obliged', 'should' or 'cannot' – or whether the relations are based on partnership and there is a certain balance between the management and the staff. Undoubtedly, good internal relations with clear aims and clear scope of responsibility should lead to a more honest and fair treatment of customers (Czechowska, Zatoń, 2016, pp. 113-138). Last but not least, there are the company relations with other institutions. Following the aforesaid company ethical codes as sources of guidelines, the rules of diligence, loyalty and corporate culture should be observed, as well as mutual trust and fair competition. Whenever contentious issues arise, conciliatory arbitration is recommended. It is also important that the professionalism, diligence and honesty of other parties are not undermined publicly, that competitors' offers are not referred to in one's own advertisements and that no negative image of competitors is created (Kodeks etyki bankowej, 2013, pp. 6-7). Besides, as regards links with local authorities and communities mentioned in the ethical codes, it is important that a company should be aware of its status as a socially sensitive subject supporting the local community, securing jobs with good working conditions and taking responsibility for the natural environment. Also, company ethical standards make reference to politics. Companies are advised to observe the law and refrain from any political activity which would propagate hatred, prejudice and discrimination against particular groups or persons (Kodeks etyki dla przedsiębiorców, 2001, pp. 1-6).

3. EMPIRICAL ANALYSIS

The data were drawn from the database of The Global Competitiveness Report 2017-2018, 2017. The sample covered 28 EU countries and the period from 2007 to 2017. The Global Competitiveness Report an annual report published by the World Economic Forum. Since 2004 it has been used to generate the well-known Global Competitiveness Index. This index tracks the performance of close to 140 countries on more than a hundred variables grouped in 12 pillars of competitiveness. The values of about one third of all variables are derived from public statistical sources while the rest come from the Executive Opinion Survey (EOS) organized in all countries participating in the research. It is worth noting that EOS is addressed to members of the supervisory councils and management boards of the randomly selected companies and the respondents are asked about the situation in the country, not in a particular company. From EOS we used three variables listed below. The values for these variables are averages[1] of the respondents' answers to the following questions:

1. Degree of customer orientation (henceforth marked DCO)

   In your country, how well do companies treat customers?
   [1 = poorly—mostly indifferent to customer satisfaction; 7 = extremely well—highly responsive to customers and seek customer retention].

2. Ethical behavior of firms (henceforth marked EBF)

   In your country, how do you rate the corporate ethics of companies (ethical behavior in interactions with public officials, politicians and other firms)? [1 = extremely poor—among the worst in the world; 7 = excellent—among the best in the world].

3. Cooperation in labor-employer relations (henceforth marked LER)

   In your country, how do you characterize labor-employer relations? [1 = generally confrontational; 7 = generally cooperative].

---

[1] The exact calculation is more complicated. For details see *The Global Competitiveness Report 2017-2018*, 2017, Appendix C, p. 338).

We conclude that for each of these variables the higher the score, the stronger and more positive firms' relationships with stakeholders. We expect that all these variables are linked together as they demonstrate the intensity and nature of relations between all kinds of stakeholders of the company. We assume that if a firm maintains ethical relationships with other firms and institutions and treats its employees well than it also cares about its customers. In this way a complex positive picture of the system of relations between firm's stakeholders is built.

We also test for differences in the level of these variables between "old" and "new"[2] EU countries. Table 1. presents average values for these variables in the period 2007-2017 for all EU countries as well as changes in the values between 2017 and 2007. Variable DCO shows the highest mean score and smallest dispersion compared to EBF and LER. Opinions about ethical behavior of firms and labor-employer relations are more diverse. The score of EBF for Finland (6.46), close to the best in the world is noteworthy indeed (with Romania on the opposite side with very modest EBF level of 3.43). There is no overall improvement in scores from 2007 to 2017 and for EBF even a decline is recorded.

Table 1. Average values in the 2007-2017 period and changes (year2017-year2007) of DCO, EBF, LER for EU countries
(Source: authors' calculation based on The Global Competitiveness Report)

Country	Variable					
	DCO	*chgDCO*	*EBF*	*chgEBF*	*LER*	*chgLER*
Austria	5.94	-0.24	5.77	-0.65	5.67	-0.33
Belgium	5.61	-0.09	5.48	-0.06	4.40	0.73
Bulgaria	4.55	0.04	3.57	-0.34	3.94	-0.03
Croatia	4.40	-0.24	3.78	-0.52	3.54	-0.53
Cyprus	4.93	-0.14	4.34	-0.43	4.80	-0.24
Czech Republic	4.82	0.16	3.71	0.01	4.56	0.22
Denmark	5.68	-0.07	6.36	-0.38	6.00	-0.35
Estonia	5.22	0.20	4.89	0.27	4.93	0.10
Finland	5.38	-0.27	6.46	-0.38	5.19	0.08
France	5.09	-0.15	5.27	-0.48	3.55	0.58
Germany	5.49	-0.11	5.71	-0.81	5.15	0.16
Greece	4.63	0.15	3.57	-0.36	3.79	0.05
Hungary	4.30	0.36	3.45	-1.02	4.28	-0.53
Ireland	5.43	0.13	5.50	0.06	5.17	0.01
Italy	4.86	0.21	3.68	-0.60	3.65	0.27
Latvia	4.76	-0.10	3.91	-0.21	4.55	-0.04
Lithuania	5.21	-0.01	4.17	-0.20	4.38	-0.11
Luxembourg	5.40	0.06	5.97	-0.03	5.38	0.43
Malta	4.49	0.19	4.47	-0.38	4.81	0.67
Netherlands	5.42	0.11	6.12	-0.20	5.69	0.32
Poland	4.83	0.83	4.17	-0.25	4.07	0.27
Portugal	4.90	0.32	4.49	-0.53	4.31	0.05
Romania	4.26	0.28	3.43	-0.25	3.66	0.44
Slovak Republic	4.59	0.19	3.54	-0.71	4.33	-0.65
Slovenia	4.99	-0.10	4.20	-0.64	4.12	0.00
Spain	4.78	0.08	4.33	-1.28	4.14	-0.14
Sweden	5.75	-0.01	6.32	-0.46	5.69	0.12
United Kingdom	5.23	0.00	5.72	-0.37	5.09	0.27
Mean	*5.03*	*0.06*	*4.73*	*-0.40*	*4.60*	*0.07*
Median	*4.96*	*0.05*	*4.40*	*-0.38*	*4.47*	*0.06*
Minimum	*4.26*	*-0.27*	*3.43*	*-1.28*	*3.54*	*-0.65*
Maximum	*5.75*	*0.83*	*6.46*	*0.27*	*6.00*	*0.73*
Range	*1.49*	*1.10*	*3.03*	*1.55*	*2.47*	*1.38*

Note: prefix "chg" means change in the value of the variable between 2017 and 2007.

---

[2] All 13 countries that entered EU since 2004.

Table 2 shows strong positive correlations between all three variables which is a desired occurrence in the complex stakeholders' relations.

Table 2. Correlation matrix for DCO, EBF, LER
(Source: authors' calculations)

	DCO	EBF	LER
DCO	1		
EBF	$.811^{**}$	1	
LER	$.739^{**}$	$.771^{**}$	1

*Notes: correlations computed for panel data, including 308 observations for each variable, ** - significant at the 0.01 level.*

Table 3 and Figure 1 provide more insight into the studied issue and present comparison of the results for "old" and "new" EU countries. We can notice substantial difference for averages of variables – lower levels for "new" EU countries compared to "old" EU countries The results of median and Mann-Whitney tests confirm significance of this remark for DCO and EBF but (rather surprisingly) not for LER. What is also worth noting is the greater heterogeneity of the average values in the group of "old" EU countries, especially for EBF and LER. When analyzing changes in levels of the variables between 2017 and 2007 divided into two groups of countries, we get the same results as for the total sample. Shifts in both groups are negligible and no significant difference between "old" and "new" EU countries is observed. However, there are some positive and negative outliers, e.g., an advance of Poland in the degree of customer orientation and a sharp drop in ethical behavior of firms in Spain.

Figure 1. Distributions (box plots with some outliers) for DCO, EBF, LER broken into two groups of EU countries
(Source: authors' calculations)
Notes: averages for the 2007-2017 period (left plot) and changes between 2007 and 2017 (right plot). The box is within the inter-quartile range (IQR) while the whiskers are limited to the highest and the lowest cases up to 1.5*IQR.

Table following on the next page

Table 3. Results of median and Mann-Whitney tests for averages and changes in the values in the period of 2007-2017 between two groups of EU countries
(Source: authors' calculations)

	Median test			Mann-Whitney test		
	Null hypothesis	**p value**	**Decision**	**Null hypothesis**	**p value**	**Decision**
DCO	Medians for old and new EU countries are equal	0.002	reject null	Distributions for old and new EU countries are equal	0.000	reject null
EBF		0.021	reject null		0.000	reject null
LER		0.449	accept null		0.052	accept null
chgDCO		1.000	accept null		0.586	accept null
chgEBF		1.000	accept null		0.254	accept null
chgLER		0.449	accept null		0.156	accept null

Note: prefix "chg" means change in the value of the variable between 2017 and 2007.
Decision on the null hypothesis based on the 0.05 significance level.

4. CONCLUSION

Study of subjects representing groups of interests has resulted in the so-called stakeholder theory. The concept of stakeholders is often linked with the notion of corporate social responsibility. It emphasizes business's need for sustainable influence on the economic sphere (with its key stakeholders being owners, customers, suppliers, contractors and local communities), on the social sphere (employees, customers, local communities) and on the natural environment (customers, employees and local communities) (see more: Marcinkowska, 2013, p. 21). The theory highlights economic aspects (financial result, total corporate value, jobs, advertising standards) and social issues such as human resources policy. The operations of companies need to be looked at in a wider perspective, taking into consideration not only the employer, but also customers and staff. There is growing evidence that improvement in the ethical functioning of companies results in visible economic profits. Research and case studies show that building ethical reputation among staff, customers and public opinion also brings many benefits (Sanchez, Sotorrio, 2007, pp. 335-346; Gable, [in:] Anthonissen, 2010, pp. 61-71). The empirical analysis of the data derived from The Global Competitiveness Report database shows strong positive correlations between three important aspects of the firms' stakeholders relations: ethical behavior of firms toward other firms and institutions, labor-employer cooperation and customer-centric approach. However, the absolute level of these relations is moderate in EU countries and significant differences are noticed between "old" (exhibiting higher scores) and "new" (presenting lower scores) EU countries. What is worrying is the lack of improvement in the levels of these stakeholders relations in EU countries over the last 10 years.

LITERATURE:

1. Al-Noorachi, M., Stopczyński, B. (2015). Orientacja na klienta w jednostkach komunalnych miasta Łodzi. *Przedsiębiorczość i Zarządzanie*. Łódź. Wydawnictwo SAN, tom XVI, zeszyt 4, część I.
2. Accounting dictionary (2018). Customer orientation. retrieved 25.01.2018. https://www.myaccountingcourse.com/accounting-dictionary/customer-orientation.
3. Boatright, J.R. (2003). *Ethics and the conduct of business* (4th ed.). Upper Saddle River, NJ: Prentice Hall.
4. Brady, M.K., Cronin Jr., J.J. (2001). Customer orientation: Effects on customer service perceptions and outcome behaviors. *Journal of service Research No 3*(3).
5. OECD (2015). Corporate governance and business integrity. A Stocktaking of Corporate Pratices.

6. Crane, A. Matten, D. (2004). *Business Ethics: A European perspective.* Oxford. Oxford University Press.
7. Creyer, E. H. (1997). The influence of firm behaviour on purchase intention: do consumers really care about business ethics? *Journal of consumer Marketing*. *14*(6).
8. Czechowska, I.D. (2015a). Kodyfikacja standardów etycznych, ze szczególnym uwzględnieniem kodeksów etycznych banków. *Bezpieczny Bank*. Bankowy Fundusz Gwarancyjny Nr 1 (58).
9. Czechowska, I.D. (2015b). Poszukiwanie rzetelności w kontekście kodeksów zawodowych na przykładzie sektora bankowego. Wrocław. *Prace Naukowe Uniwersytetu Ekonomicznego we Wrocławiu.*
10. Czechowska, I.D. (red.) (2016). *Etyka w relacjach instytucji finansowych z gospodarstwami domowymi,* Łódź. Wydawnictwo Uniwersytetu Łódzkiego.
11. Czechowska, I.D., Zatoń W. (2016). Struktura i zawartość kodeksów etyki instytucji bankowych*, Prakseologia*, Tom 158.
12. De George, R.T. (1987). The status of business ethics: Past and future. *Journal of Business Ethics*" no 6.
13. *Dyrektywa 2005/29/WE Parlamentu Europejskiego I Rady z dnia 11 maja 2005 r. dotycząca nieuczciwych praktyk handlowych stosowanych przez przedsiębiorstwa wobec konsumentów na rynku wewnętrznym.* L 149/22.
14. Ethics Resource Center (2012). *National Business Ethics Survey of Fortune 500® Employees. An Investigation into the State of Ethics at America's Most Powerful Companies.*
15. European Commission. (2017). *Consumer Conditions Scoreboard. Consumers at home in the Single Market*.
16. Gable, T. (2010). Wizerunek jako część strategii korporacyjnej. Bufowanie reputacji dla zyskania długoterminowych korzyści (in:) Anthonissen P.F., *Komunikacja kryzysowa.* Warszawa. Wolters Kluwer Polska.
17. Gasparski, W. (2007). *Wykłady z etyki biznesu.* Warszawa. Wyższa Szkoła Przedsiębiorczości i Zarządzania im. L. Koźmińskiego.
18. Goodpaster, K.E. (1997). Business ethics. (in:) Werhane, P.H., Freeman R.E. (Eds.). *Encyclopedic dictionary of business ethics*. Cambridge. MA: Blackwell.
19. Hansen, G. (1993). Wprowadzenie do etyki biznesu. *Etyka* nr 26.
20. Heskett, J.L., Sasser, W.E. and Schlesinger, L.A. (2003). The Value Profit Chain. *Business Book Review,* Vol. 20.
21. Hesselink, M., van Iwaarden, J., van der Wiele, T. (2004). Mystery shopping: A tool to develop insight into customer service provision. *Total Quality Management & Business Excellence* No 16(4).
22. Johnson, D. (2015). *Ethics at Work. 2015 Survey of Employees. Main Findings and Themes*. London. Institute of Business Ethics.
23. Jaworski, B.J., Kohli, A.K. (1993). Market Orientation: Antecedents and Consequences. *Journal of Marketing* No 57.
24. *Kodeks etyki bankowej (Zasady dobrej praktyki)* (2013). Warszawa. Związek Banków Polskich.
25. *Kodeks etyki dla przedsiębiorców (*2001). Warszawa. Krajowa Izba Gospodarcza.
26. Kolb, R.W. (2008). *Encyclopedia of Business Ethics and Society* (e-book). Thousand Oaks: SAGE Publications. Inc. Available from: eBook Academic Collection (EBSCOhost). Ipswich. MA. Accessed 20.06.2015.
27. Kumar, V. (2010). *Zarządzanie wartością klienta*. Warszawa. Wydawnictwo Naukowe PWN.

28. Marcinkowska, M. (2013). *Kapitał relacyjny banku, kształtowanie relacji banku z otoczeniem.* tom 1. Łódź. Wydawnictwo Uniwersytetu Łódzkiego.
29. Michalczuk, G., Widelska, U. (2011). Orientacja na klienta jako przesłanka rozwoju małego przedsiębiorstwa - tradycyjne a nowoczesne ujęcie marketingu na przykładzie wybranych przedsiębiorstw w Podlaskiem. (in:) Bielawska, A. (red.). *Uwarunkowania rynkowe rozwoju mikro, małych i średnich przedsiębiorstw - mikrofirma 2011. Tworzenie i zarządzanie.* Szczecin. Zeszyty Naukowe Uniwersytetu Szczecińskiego nr 638. Ekonomiczne Problemy Usług. nr 63.
30. Munter, D. (2013). Codes of ethics in the light of fairness and harm. *Business Ethics: A European Review.* Volume 22. Number 2 April.
31. Noordzij, L. (2013). *What is customer orientation?* https://www.effectory.com/knowledge/themes/what-is-customer-orientation/ 4 July 2013.
32. Pawłowska, A. (2015). Kompetencja „orientacji na klienta" u osób zakładających działalność gospodarczą oraz jej znaczenie dla procesu inwestowania w rozwój pracowników. *Problemy Zarządzania* vol. 13 nr 1 (51), t. 2.
33. Salomon, R.C. (1997). Etyka biznesu. *Etyka* nr 30.
34. Sanchez, J.L.F., Sotorrio, L.L. (2007). The creation of value through corporate reputation. *Journal of Business Ethics*. Vol. 76. no. 3.
35. Tajeddini, K., Elg, K., Trueman, M. (2013). Efficiency and Effectiveness of Small Retailers: The Role of Customer and Entrepreneurial Orientation. *Journal of Retailing and Consumer Services*. vol. 20. Issue 5. September.
36. The Global Competitiveness Report 2017-2018, World Economic Forum, 2017. Retrieved 03.02.2018 from http://reports.weforum.org/global-competitiveness-index-2017-2018/downloads/?doing_wp_cron=1517660294.5444889068603515625000.
37. Velasquez, M.G. (1996). Business ethics, the social sciences, and moral philosophy. *Social Justice Research*. Vol. 9.
38. Velasquez, M.G., Velazquez, M. (2002). *Business ethics: Concepts and cases* (Vol. 111). Upper Saddle River. NJ: Prentice Hall.

SUSTAINABLE TOURISM – THEORY VERSUS PRACTICE

Elzbieta Szymanska
Bialystok University of Technology
15-351 Białystok, Wiejska str. 45 A, Poland
e.szymanska@pb.edu.pl

ABSTRACT

The aim of the article is to compare the sustainable tourism concept with the attitudes of tourists' behaviour, in terms of the principles and criteria of sustainable tourism. The problem is the lack of sustainable behaviour of tourists visiting natural protected area. The article consists of three basic parts. The idea of sustainable tourism and the theoretical model of sustainable tourist, there are main goals and principles described in the first part. The second part contains a presentation of a place of research and a methodology of survey on a group of 769 tourists visited the national parks in the north-eastern Poland. The basic methods applied in the research include the questionnaire tool and Pearson's chi-squared test for independence with using Statistic 2009 Program. In the last part the tourist model consistent with the concept of sustainable tourism is compared with the practice, it means with the market realities observed in the course of the empirical survey performed. The results of the research shows that the concept of sustainable tourism is not sufficiently understood by tourists. This requires continuing this research and the educational effort spread over a number of years.
Keywords: natural areas, sustainable tourism, tourism, tourist

1. INTRODUCTION

The idea of sustainable tourism is part of the general concept of sustainable development [B. Bramwell, 2004]. The concept of sustainable tourism should be referred to the manner of organisation and functioning of the tourism sector as a whole with a hierarchic character, serving to achieve satisfactory social and economic objectives without diminishing the base of tourist and natural resources, and integrated with other fields of human activity. The problem described in the article is the lack of sustainable behaviour among tourists visiting natural resources. The aim of the article is to compare the sustainable tourism concept with the attitudes of tourists' behaviour, in terms of the principles and criteria of sustainable tourism. The following research questions were indicated:

- How should an ideal tourist behave in accordance with the concept of sustainable development?
- What is the real behaviour of visiting tourists at the destination?

The point of departure for the implementation of the assumed objective is to construct the tourist model in the context of sustainable tourism so that it can be compared with the results of an empirical survey. The methods applied in the research is the survey method. In designing the tourist model and the survey questionnaire, use was made of selected indicators proposed by the World Tourism Organization (UNWTO) [Indicators…, 2004; Policies…, 2007] to examine the tourists' behaviour and compare it with the model proposed. The results of the research would be extrapolated to other tourism areas and should provide the basis for the assessment and possible verification of the assumptions adopted and for the implementation of objectives in tourism development programmes.
.

2. THE ESSENCE OF SUSTAINABLE TOURISM

The concept of sustainable tourism is based on the definition of responsible tourism formulated in 1965 by W. Hetzer [1965].

Initially, it was called alternative tourism, soft tourism and environmentally sensible tourism [M. Durydiwka, A. Kowalczyk, S. Kulczyk, 2010, p. 27]. H. Coccossis distinguishes three interpretations of sustainable tourism [cf. H. Coccossis 1996, pp. 8–9], with each of them focusing on different benefits: economic, natural and social ones. Its promotional value is the main reason why this concept is used [E. Cohen 2002, p. 268; P. Lansing, P. De Vries 2007, p. 79]. Some authors criticise the concept of sustainable tourism, considering it to be unreal and taking the position that a broader look should be taken at tourism, beyond the principle of sustainability, since "…it is a time to seek a new paradigm to replace it" [R. Sharpley, 2009, p. 9]. Reflections concerning the problems encountered in defining sustainable tourism can be traced in the literature [e.g. M. Borkowska-Niszczota, G. Dobrzański, H. Kiryluk, E. Szymańska, 2010, p. 147-166]. The concept of sustainable tourism should comprise all the activities carried out within the framework of the tourism economy, which would be ecologically allowable, economically viable and socially desirable – from the point of view of tourism companies and local communities. To properly satisfy the accessible tourism market, a more sophisticated understanding of accessible destination experiences is needed by hotels and tourism operators [compare: S. Darcy, B. Cameron,S. Pegg, 2010, pp. 515-537]. The participation in the system of sustainable tourism should consists in "an equilibrium of the forces of the triangle", composed of three groups of entities: tourist companies, tourists and inhabitants of the tourist destination [B. Bramwell, 2011; A. Niemczyk, 2008, p. 74]. In addition to sectoral companies and non-governmental tourism organisations, successive stakeholders include the inhabitants of a tourist destination and tourists arriving at this destination. Different concepts of sustainable tourism are presented considering changes in demand caused by new needs of tourists, but the tourists' and visitors' attitudes are fairly seldom analysed [A. Niezgoda 2006, p. 35]. The object of the Author's research was the implementation of the concept of sustainable tourism by tourists, which seems to be fundamental for the implementation of the concept of sustainable tourism.

3. THE SUSTAINABLE TOURIST MODEL

A tourist is defined as a person who travels to a different locality outside of his place of permanent residence for a period not exceeding 12 months where the purpose of the travel is not to take a permanent job at the visited locality and who uses an accommodation there for at least one night" [The Act on Tourism Services, 1997]. In the literature, many tourist models can be distinguished. The pattern of two basic tourist models constituting two opposite extremes should be considered the basic one; specifically, a tourist oriented on many intensive cognitive and entertainment experiences and a tourist who wishes quiet and a contact with nature. It is obvious that the majority of tourists fall somewhere between these two extremes.

The tourist model consistent with the theory of sustainable development is characterised by the knowledge of the objectives and principles of sustainable tourism involving the respect for all the four orders (environmental, economic, social and spatial. In the light of the idea of sustainable tourism, based on selected indicators proposed by the UNWTO [Indicators…, 2004, pp. 55-192], a tourist should be characterised by the following features:

- when shopping on a daily basis he pays attention to the environmental aspects,
- he takes active measures for his place of residence to protect the environment,
- he knows and understands the ideas of sustainable tourism,
- the aim of his travel is to rest in accordance with the idea of sustainable tourism,
- when choosing the accommodation he applies the criteria based on the idea of sustainable tourism,
- he prefers forms of recreation which are environment-friendly and support the regional development, instead of impeding it,
- he takes care of the cleanness of the natural environment,

- he behaves in a manner consistent with idea of sustainable tourism,
- he discerns mistakes in the behaviour of other tourists and visitors,
- he discerns the impact of tourism on the state of the natural environment,
- he discerns and assesses the quality of the particular elements of the environment,
- he discerns the threats for the environment,
- he is satisfied with the ability to participate in the implementation of the idea of sustainable tourism.

In accordance with the latter concept, the exemplary tourist model consistent with the concept of sustainable tourism is the cognitive tourist type, who is oriented on coming in contact with nature, culture and people [Człowiek….,1996].

4. METHODOLOGY OF RESEARCH CONDUCTED
The method applied in the research (survey pull) includes the questionnaire as a tool. Also Pearson's chi-squared test for independence was applied, with using Statistic 2009 Program.
The place of the research was one of the peripheral areas of the European Union: the region of north-eastern Poland. This region characterised a socially and economically backward, with a low living standard, and, at the same time, one of its few riches is the well-preserved nature, which create opportunities for its development based on sustainable tourism. The research was carried out in 2009, 2010 and 2015 years. Given the intense tourist traffic in the summer season, it was possible to use a random selection, by selecting every fifth person for the survey. The tourists were polled on beaches, at accommodation sites, on pedestrian and cycling routes tracks and at museums. Ultimately, a total of 769 respondents took part in the survey. The survey questionnaire contained 8 key research areas regarding to the sustainable tourism. They included 6 single-choice questions and 2 multiple-choice questions with the possibility of adding one's own proposal (a half-open cafeteria). The respondents were anonymous.
All of indicators selected in the model were used in the questionnaire.

5. THE RESEARCH FINDINGS
On the basis of the personal data, the following information was compiled concerning the education level and the permanent place of residence of the respondents. The largest group of respondents mostly had secondary education – 54%, including general secondary education - 31% (237 persons) and vocational secondary education - 23% (174 persons). It was followed by 296 persons (38.5%) with higher education, while a small number of respondents had primary and gymnasium education – 53 persons (7%) and 9 persons (1.2%) did not answer this question. The scope of knowledge concerning sustainable tourism and tourists' behaviour may vary depending on the permanent place of residence. The study conducted shows than most respondents live in urban areas (79%), including their largest number living in a town/city with 20,000 to 100,000 inhabitants, i.e. 161 persons (21%), 19% of respondents live in rural areas (145 persons), while the smallest group of respondents lives in a city with more than 500,000 inhabitants, i.e. 11% (82 persons). The environmental awareness is one of the factors which determine the choice of the place of recreation because the quality of the environment is very important [W. Kurek, 2003, p. 139]. The environmental self-awareness of the respondents, consisting in their knowledge of the effects of human impacts on the environment and their attempts to limit their own impacts on the environment, was assessed. The results are shows in the Fig. 1.

Figure following on the next page
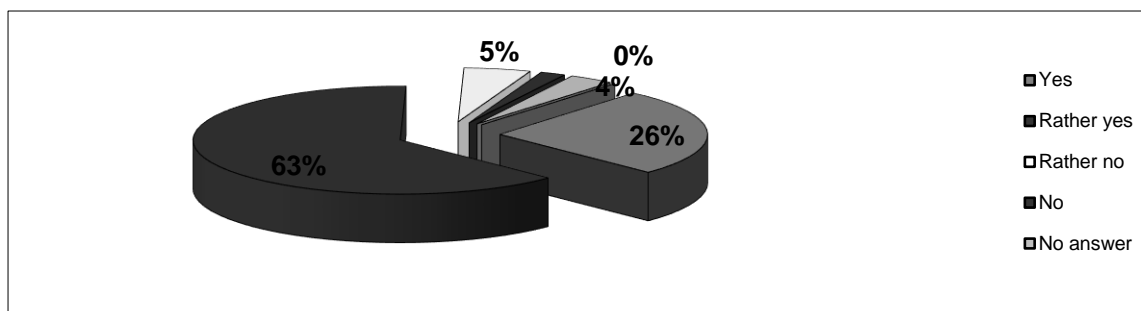
Figure 1. Tourists' self-assessment concerning environmental awareness
Source: Own study based on the survey performed.

The Figure 1 indicates that 26% (202 persons) of the respondents considered themselves environmentally aware persons, the largest group of respondents believed that they were rather aware (63%, i.e. 485 persons), while 40 (5%) persons thought that they were rather unaware. 15 persons (2%) considered themselves environmentally aware. The other 27 (4%) persons refused to answer the question. No dependence measurement by using method Pearson's Chi^2 was found between the education level and the permanent place of residence and a tourist's self-assessment concerning environmental awareness. The measures taken by tourists to protect the environment seem to be very important for the implementation of the idea of sustainable tourism; here, the respondents were able to give their own proposal or choose many options from the 9 alternatives proposed. The overwhelming majority took measures to protect the environment 604 (79%). 165 (21.5%) respondents did not take any measures for this purpose. The largest group of respondents 58% (442 persons) saved water and energy, reducing the threat for the natural environment, while 425 (55%) persons segregated waste. More than 18% (142 persons) paid attention in the course of shopping if products have been made considering environmental protection. Many respondents did not use their car or limited its use (13.8%), whereas the other activities, such as the membership in an environmental rights organisation, the participation in environmental protests, volunteer work, were considered of slight significance, since they were indicated by less than 5% of respondents. Next questions concerned sustainable tourism, in particular the knowledge of this concept and the assessment of the knowledge concerning this idea. Respondents were offered alternative answers "yes" or "no". The results shows than over half of the respondents 468 (61%) did not know this concept, while 283 (37%) knew this concept, and 2% did not give any answers. One of the most important aspects of sustainable tourism is the richness and cleanness of the natural environment at the place where tourists stay. In the light of the research on tourists' preferences [M. Jedlińska 2004, p. 41], an increasing number of persons avoid polluted and excessively congested areas as the place of their rest, and more and more persons respect nature and historic sites. The proposed answers were ordered on a five-point scale from "very important" to unimportant" (Fig. 2).

Figure following on the next page
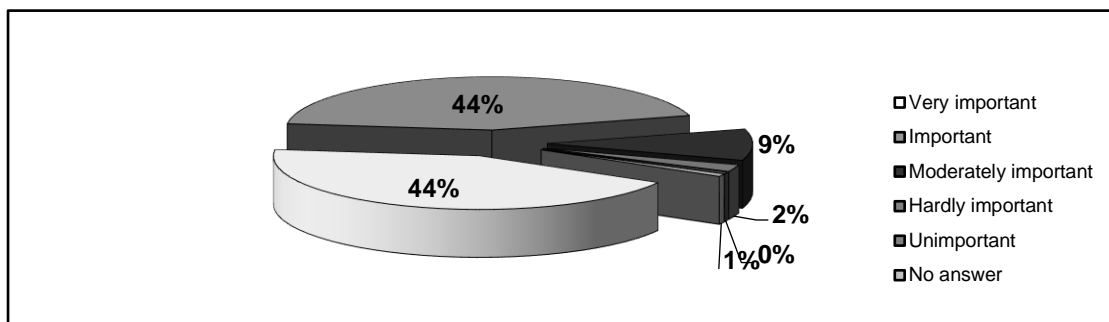
Figure 2. The assessment of the importance of the richness and cleanness of the natural environment in the course of a travel
Source: Own study based on the survey performed.

88% of respondents (671 tourists) believed that the richness and cleanness of the natural environment were very important or important for tourism, 73 tourists (9%) considered them to be moderately important, while 16 persons (2%) regarded them as hardly important. The research of independence demonstrated that there was a significant dependence between the permanent place of residence and the assessment of the importance of the richness and cleanness of the natural environment in the course of a travel: the bigger the town/city of residence was, the greater the need was for contact with a clean environment. These findings are in contradiction with the results obtained in the next survey. Respondents were offered 11 alternative answers, with a multiple-choice opportunity to indicate any other possible behaviour inconsistent with the idea of sustainable tourism (Fig. 3).
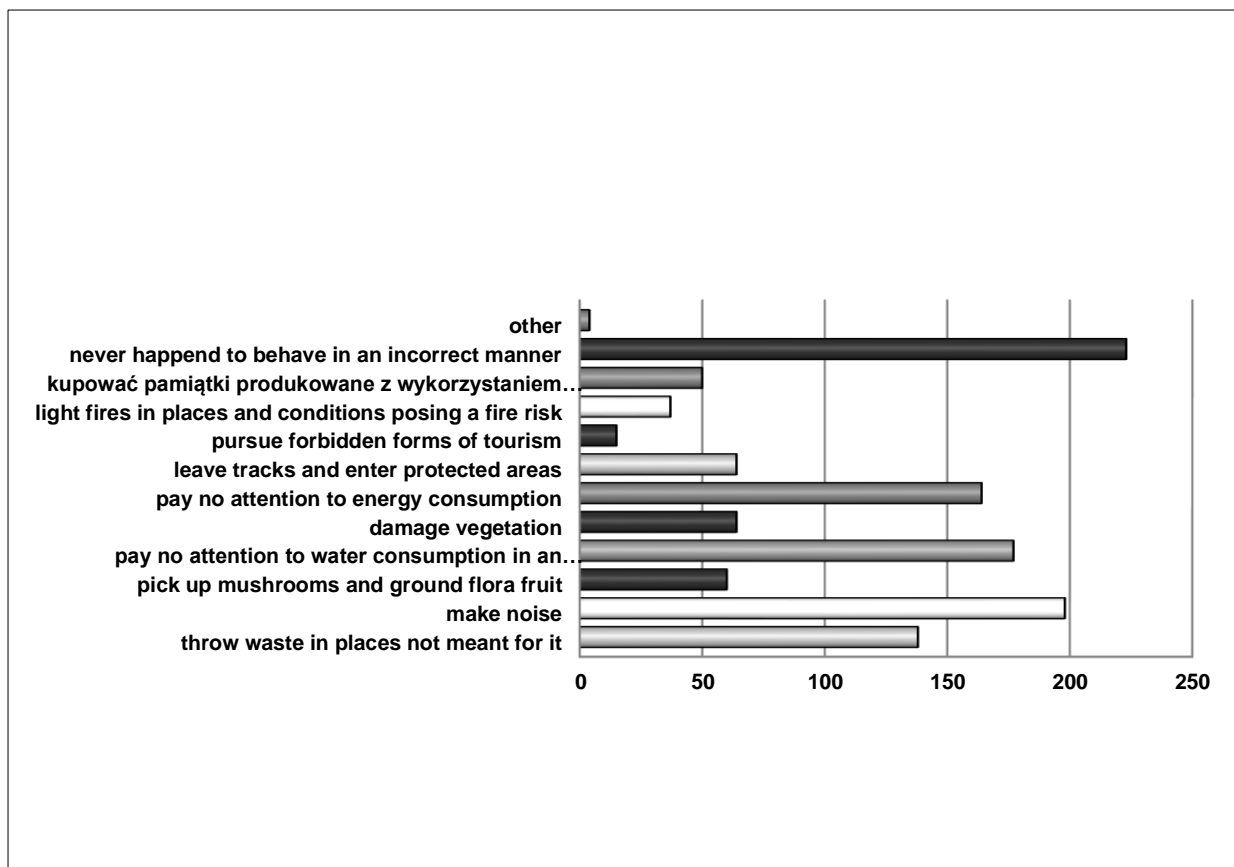
Figure 3. Tourists' behaviour inconsistent with the idea of sustainable tourism
Source: Own study based on the survey performed.

The answers shows that almost every third tourist (223 persons - 31%) never happened to behave in an incorrect manner, while among the others 28.3% (198) of persons were noisy and 19.7% (138) of respondents happened to throw waste in places not meant for it or leave tracks and enter protected areas. Few tourists - 164 (23.5%) attributed importance to energy consumption, while 177 (25.3%) paid no attention to the water consumption level at the place where they rested. The respondents least frequently bought souvenirs produced using protected species (2.1%), whereas the other activities occurred less often than for every tenth person. Next analysed area was the assessment of the impact of tourism on the state of the natural environment at the present place of rest. There were offered answers on a five-point scale including assessments from "absolutely favourable" to "unfavourable" (Fig 4).
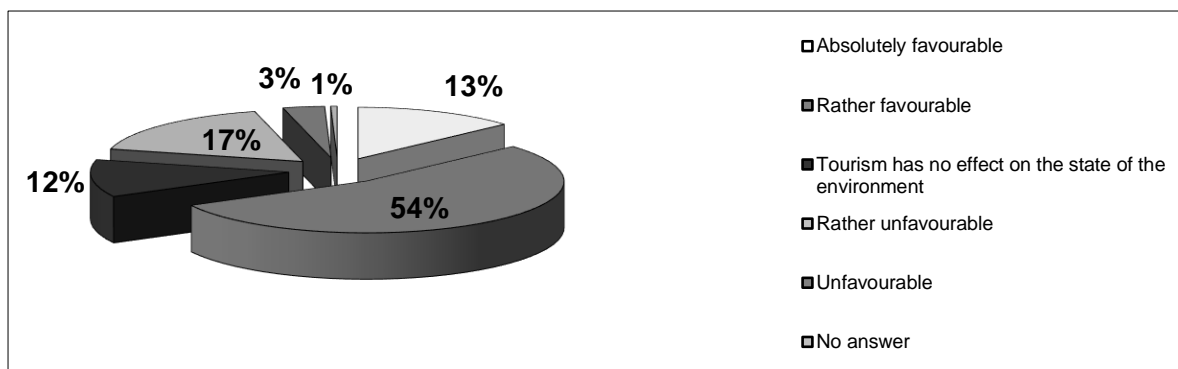
Figure 4. The impact of the tourism development on the state of the natural environment
Source: Own study based on the survey performed.

The research shows than most respondents (54%, 414 tourists) indicated the rather favourable and absolutely favourable (13%, 102 tourists) impact of tourism on the state of the natural environment at the place of rest. At the other extreme, there were 26 persons (3%) who strongly indicated the adverse impact of tourism on the state of the natural environment, 90 respondents (12%) believed that tourism had no effect on the state of the environment, while 132 (17%) thought that tourism had a rather unfavourable impact on the environment. 4 respondents gave no answer. The was no dependency between their education level, or their permanent place of residence. Concluding, it seems that despite the low level of respondents' knowledge concerning the concept of sustainable tourism and their behaviour which was often inconsistent with the idea of sustainable tourism, its ideas generally coincided with the tourists' expectations, while tourism itself was in most cases positively assessed in the context of the concept in question.

6. DISCUSSION

The results of the research carried out by the Author was to show the deviations of the real tourists from the presented model of a sustainable tourist. Somewhat similar research was done by A. Niemczyk [2008, p. 77]. The purpose of that research was to confirm, inter alia, the thesis that with their knowledge and behaviour the students of tourism-related faculties favoured the sustainable development of tourism. The purpose-selected research sample consisted of 200 students of engineering faculties and 200 students of tourism-related faculties as the respondents. The students found it fairly easy to identify tourists' behaviour which they regarded as most sensitive. The elements of tourists' behaviour which irritated them included e.g.. the lack of respect for nature and or the dropping of waste around, i.e. in general terms, uncultured behaviour. Respondents also indicated tourists' recklessness (their inadequate preparedness for mountain trips, their breach of the ban on entering closed routes etc.). Similar conclusions was going on from the research on tourists' behaviour in the Peruvian Amazon,

where the authors distinguished three typologies of tourists visiting three Amazonian lodges in Peru, differing by several socio-economic and cultural factors, and by their motivations [C.J.A. Gonzalez et al., 2012.]. In order to evaluate the tourists' behaviour, the authors used, the following measures: native guide, local guide, group size, activity time length, cultural activity, forest succession, mammal index, bird index and others. There was indicated only one type of tourists with a positive relation between their overall satisfaction and ecological features, which they called "true ecotourists". The results obtained by A. Niemczyk and C.J.A. Gonzalez et al. can be compared with those shown in Fig. 4, which presents the evaluation of tourists' behaviour inconsistent with the idea of sustainable tourism. The research conducted by Author takes into account the following issues: tourists' self-assessment concerning environmental awareness, tourists' measures to protect the environment, the assessment of the importance of the richness and cleanness of the natural environment in the course of a travel and tourists' self-assessment concerning their environment-friendly behaviour at the tourist destination. These issues were summed up with an assessment of the impact of tourism on the natural environment.

7. THE COMPARISON OF THE TOURIST MODEL AGAINST THE RESULTS OF AN EMPIRICAL SURVEY

In order to achieve the objective which the Author set at the outset, it is necessary to compare the designed model of the tourist that is optimal from the point of view of the concept of sustainable tourism with the results of an empirical survey carried out on a group of tourists. The Table 1. Shows the final results.

Table 1. The comparative analysis of the tourist model against the results of an empirical survey in the light of the idea of sustainable tourism

An ideal tourist in accordance with the assumed model	Results of an empirical survey
He is environmentally aware	Environmental awareness is demonstrated by 72% of respondents.
He takes measures to protect the environment, saves water and energy, pays attention to what he buys and segregates waste	58% save water and energy, 55% of respondents segregate waste, 18% check when shopping whether products have been manufactured in a manner considering environmental protection, 14% do not use a private car or limit its use.
He knows the concept of sustainable tourism	This concept is unknown for 61% of respondents
He is aware that the cleanness and richness of the environment are important for the tourist traffic	87% of respondents believe that the cleanness and richness of the environment are important for their rest
He behaves in a manner suitable for the place: he does not make noise, he does not throw waste, he does not leave the designated tracks, he does not pick up mushrooms and ground flora fruit in forbidden places, he pays attention to water and energy consumption, he does not pursue forbidden forms of tourism, he does not light fires in places and conditions posing a fire risk, he does not buy souvenirs produced using protected species	31% of respondents recognise that they always behave correctly (in accordance with the principles of sustainable tourism), while the others happen, at the tourist destination, to: make noise (28%), leave tracks (20%), throw waste in places not meant for it (20%), pay no attention to the consumption of water (25%) and electricity (23%) at the accommodation
He believes that tourism has a positive impact on the natural environment	67% of respondents indicate a positive impact of tourism on the natural environment

Source: Own study based on the survey performed.

It can be recognised that there is a large discrepancy between theory and practice. The discrepancy concerns primarily the knowledge concerning sustainable tourism concept, the awareness of the richness and cleanness of the tourist destinations, and the measures to protect the environment. The scientific importance of the research consists in enhancing the knowledge concerning the real implementation of the concept of sustainable development and the degree of sustainability of tourism. The research was performed in the case of a selected peripheral region of the European Union, which is relatively poor, but has exceptional natural values. It can make an important contribution to the identification and understanding of the potential for the development of sustainable tourism in these areas and the assessment of tourists' behavior consistent with this idea.

8. CONCLUSION

The aim of the article was to compare the actual tourists' behaviour in the natural research area with the ideal model of the sustainable tourist. The objective has been achieved and the following conclusions can be drawn as the research performed:

- Respondents, as the real tourist, behaves at the tourist destination in a way which greatly deviates from the optimum model;
- 61% of respondents do not know the term *sustainable tourism*, as only 37% said that they had heard of this concept;
- 67% respondents believe that tourism has a positive impact on the natural environment;
- 87% respondents state that the cleanness and richness of the environment are important for their rest;
- 79% of respondents follow the principles of sustainable development in their daily life by saving water and energy (58%), segregating waste (55%) or checking when shopping whether products have been produced considering environmental protection (18%);
- since 89% of them thought that they were environmentally aware;
- tourists try to act in a manner which interferes as little as possible with the state of the natural environment.

Summarising, it would be difficult to show in practice an ideal tourist whose behaviour would be consistent with the model assumed; however, efforts should be taken by enhancing tourists' awareness to continuously improve their behaviour so as to bring it, as much as possible, to the optimal behaviour. Presented results can be helpful in the performance of further research on the idea of sustainable tourism and the practical possibilities of implementing its principles.

LITERATURE:

1. Borkowska-Niszczota M., Dobrzański G., Kiryluk H., Szymańska E., (2010). *Problemy interpretacji turystyki zrównoważonej (The problems of the interpretation of sustainable tourism)* , "Folia Turistica", No. 22-2010, pp. 147-166.
2. Bramwell B., (2004). *Costal Mass Tourism. Diversification and Sustainable Development in Southern Europe*, Bristol: Channel View Publications.
3. Bramwell B., (2011). *Governance, the state and sustainable tourism: a political economy approach*, "Journal of Sustainable Tourism", May/Jun, Volume 11, Issue 4/5, 459-477.
4. Coccossis H., (1996). *Tourism and sustainability: Perspectives and implications*, in: *Sustainable Tourism? European Experiences*, eds. G.K. Priestley, J.A. Edwards, H. Coccossis, CAB International, Wallingford, pp. 1–21.
5. Cohen E., (2002). *Authenticity, equity and sustainability in tourism*, "Journal of Sustainable Tourism" vol. 10, No. 4, pp. 267–276.
6. *Człowiek a turystyka, Zarys socjologii turystyki (Man and tourism. An outline of the sociology of tourism)*, (1996). K. Przecławski (ed.), Warszawa: ALBIS.

7. Darcy S., Cameron B., Pegg S., (2010). *Accessible tourism and sustainability: a discussion and case study*, "Journal of Sustainable Tourism", May, Volume 18, Issue 4.
8. Durydiwka M., Kowalczyk A., Kulczyk S., (2010). *Definicja i zakres pojęcia „turystyka zrównoważona" (The definition and scope of the term "sustainable tourism")*, [in:] *Turystyka zrównoważona (Sustainable Tourism)*, A. Kowalczyk (ed.), Warszawa: PWN.
9. Gonzalez C. J. A., Martin-Lopez B., Kirkby Ch. A., Torres-Sovero, C., (2012). *Social-ecological factors influencing tourist satisfaction in Tyree ecotourism lodges in the southeastern Peruvian Amazon,* "Tourism Management", No. 33, p. 545-552.
10. Hetzer W., 1965, *Environment, tourism and culture.*
11. *Indicators of Sustainable Development for Tourism Destination. A guide*, (2004). World Tourism Organization, Madrid, 55-192; also available on: http://www.biodiversity.ru/coastlearn/tourism-eng/con_ethics.html
12. Jedlińska M, (2004). *Postmodernizm i model trwałej konsumpcji jako przesłanki zmian konsumpcji turystycznej (Postmodernism and the model of sustainable consumption as the premises for change in tourist consumption)* , "Problemy Turystyki" 2004, Nos. 1-2, p. 42.
13. Kurek W., (2003). *Turystyka zrównoważona – turystyka przyszłości*, *(Sustainable tourism – a tourism of the future)* [in:] *Turystyka czynnikiem integracji międzynarodowej (Tourism as a factor of international integration),* J. Biliński, D. Sawaryn (eds.), Rzeszów: Publishing House of the University of Information Technology and Management.
14. Lansing P., P. De Vries, (2007). *Sustainable tourism: Ethical alternative or marketing ploy*, "Journal of Business Ethics" vol. 72, pp. 77–85.
15. Niemczyk A., (2008). *Turysta wobec koncepcji zrównoważonego rozwoju*, *(A tourist and the concept of sustainable development)* [in:] *Zrównoważony rozwój turystyki*, *(Sustainable development of tourism),* S. Wodejko (ed.), Warszawa: Warsaw School of Economics – Publishing House.
16. Niezgoda A., (2006). *Obszar recepcji turystycznej w warunkach rozwoju zrównoważonego (Tourism destinations under the conditions of sustainable development),* Poznań: Publishing House of the Poznań University of Economics.
17. *Policies, Strategies and Tools for the Sustainable Development of Tourism*, (2007). Madrit: UNWTO.
18. Sharpley R., (2009). *Tourism Development and the Environment: Beyond Sustainability?*, Lodon: Earthscan.
19. *The Act on Tourism Services*, (1997). "Official Journal of the Laws", No. 133, Item 884.

REGIONAL ECONOMIC DEVELOPMENT IN ROMANIA FROM THE PERSPECTIVE OF UNEMPLOYMENT - DISPARITIES IN NUTS LEVEL II

Danciulescu Andreea-Gabriela
University of Craiova, Romania
andreeadanciulescu@yahoo.com

ABSTRACT

Unemployment values and the employment situation on development regions are particularly relevant in the formation of a concrete opinion regarding economic growth at the level of territorial administrative units (NUTS). The research comprises aspects of the 8 development regions of Romania (NUTS II) in terms of economic development related to the unemployment rate. The purpose of the article is to measure the degree of economic development from the employability perspective at the level of each territorial administrative unit (NUTS II) and to identify possible disparities at their level. The results will allow the analysis of regional development prospects by connecting to the Europe 2020 strategy and the regional competitiveness rankings achieved at EU level. Facilitating the integration of young people into the labour market and encouraging their professional mobility could constitute an effective measure of decreasing the unemployment rate at regional level.
Keywords: composite index of disparities, development regions, European regional competitivity, Romania, unemployment rate

1. INTRODUCTION

Connected to the NUTS classification (Nomenclature of Statistical Territorial units) used at the European Union level, Romania's territorial units are grouped into 4 development macroregions (NUTS I), each composed of 2 development regions, together with 8 development regions (NUTS II). Macroregion 1 is made of the North-West and the Central development regions; Macroregion 2 ismade of the North-East and South East development regions; Macroregion 3 is made of South-Muntenia and Bucharest-Ilfov development regions; Macroregion 4 is made of the South-West Oltenia and West development regions. Neither the development regions nor the macro-regions that they compose have legal personality, their purpose being to create in terms of economic development, each region maximising its potential, so that there are no discrepancies between them. In turn, the 8 development regions together comprise a number of 41 counties and the Municipality of Bucharest (NUTS III). Less developed areas are areas with a high unemployment rate, with limited and reduced employment, unable to attract foreign investors to develop business in our country. The underdevelopment of certain territorial administrative units is determined by several factors, not just by relatively absent foreign investment. Agriculture, cross-border trade, poorly developed industry, migration (internal or international, of people with higher education), the decrease of the value of the natural growth of the population in Romania are just some of the issues that directly influence economic development. Specifically, in order to measure the degree of economic development of territorial administrative units, certain indices of disparities (e.g. a composite index taking into account several variables, Gini, Theil or Herfindahl indices) are used, or regional competitiveness indices (RCI) determined by the European Commission for all regions of the Member States. According to the European Commission, "the novelty of this 2016 edition of RCI is the interactive web tool, which allows for a more detailed analysis and comparison of each region, either with its peers in terms of GDP per capita or with all EU regions" (European Commission, 2016).

Starting from these considerations and from the different degrees of development of the regions of Romania, the general objective of this work is to analyse the regional disparities in Romania at the level of the 8 development regions of Romania. Based on these, I will draw recommendations for the development prospects of the regions, connected to the targets for Romania of the Europe 2020 Strategy: the employment rate of 75%, 3% of GDP to be invested in health and development, 25% decrease in the number of those living in poverty (Europe Strategy 2020, 2010, p. 36).

2. SPECIALIZED LITERATURE

Regional disparities (regional pathology) are taken into consideration depending on determining causes and spatial coverage. Depending on the causes, there are hereditary-traditional disparities (resistant to change, without ever being the subject of a regional development policy approach) and acquired disparities (subjected to economic change, either for decreasing recession or over-development). Depending on spatial coverage, there are intra-regional disparities, inter-regional disparities and European disparities (Lolescu, 2009, p. 3).

In Quah's opinion (1996, p. 13), economic disparities occur because poorly developed countries do not have the capacity to implement new technologies, as is the case in developed countries. Therefore, poorly developed countries tend to remain underdeveloped, developed ones tend to remain the same, and those with a medium level of development will choose which level they want to fit in (Postoiu, Bușega, 2015, p. 4). The objective of regional policy is to contribute to "reducing existing disparities between the development levels of different regions and the lagging of the less developed regions, or the islands, including rural regions", funding from European non-refundable funds (European Institute of Romania, 2003, p. 8). At Community level, non-refundable European funds were designed to help mitigate regional disparities, being considered solidarity funds. Specifically designed to limit regional disparities at the level of the European Union's regions was the European Regional Development Fund, through which they have insured, since the year 1975, investments for: infrastructure, health, education, business of SMEs, creating secure jobs. Regional disparities regarding the unemployment rate have deepened during the economic crisis, with discrimination on the labour market increasingly common. "Between 2008 and 2013, the unemployment rate increased in 227 of 272 NUTS 2 regions. Virtually all regions in which this rate fell were in Germany. The regions in transition recorded in 2013 the highest unemployment rates, with an average of 15%" (European Commission, 2014, p. 63). Regional competitiveness is defined as "the sustainable growth of the living standards of a nation or region and achieving the lowest level of involuntary unemployment" (European Competitiveness Report, 2007). Competitiveness is essential for the development of regions, therefore, "the competitiveness is treated as the mean for time-space comparison, i.e. for external validation of an area, and thus as the mean for achieving and sustaining economic growth, contented living standard and well-being of people" (Borozan, 2008, p. 50). Regional competitiveness is "measured" by means of the regional competitiveness Indicator (ICR) proposed by the European Commission, which was launched in the year 2013. Information about its values is published every 3 years in order to be able to follow the evolution. This indicator allows "the provision of a European perspective on the competitiveness of EU regions and is based on the approach used for the global Competitiveness Index of the World Economic Forum" (European Commission). The index evaluates regions through the prism of 11 pillars, classified as follows: 5 pillars falling within the elemental group (institutions, macroeconomic stability, infrastructure, health, basic education); 3 pillars referring to efficiency (higher education, professional training and lifelong learning, labour market efficiency, market size); 3 pillars of the innovation group (technological maturity, sophistication of the business environment and innovation) (European Commission).

3. METHODOLOGY AND DATA

In conducting research and achieving the most eloquent results between regions, we use the composite index of disparities, noted with I_d, which comprises several indicators:

- GDP/inhabitant, measuring the degree of economic development;
- The unemployment rate ($R_ș$), which measures the capacity to absorb labour resources by the labour market;
- and the average net monthly salary (S_{ml}), relevant to measure the standard of living.

With the composite Index of disparities (I_d) (equation 1), the level of development and employability level of the regions (Goschin et al., 2008, p. 85) shall be harnessed.

$$I_d = \sqrt[3]{\frac{PIB regional/loc_i}{\overline{PIB/loc}} \cdot \frac{S_{mli}}{\overline{S_{ml}}} \cdot \frac{\overline{R_ș}}{R_{și}}}$$

(1)

where:
- i represents the region;
- $\overline{PIB/loc}$ constitutes the average GDP/inhabitant at national level;
- $\overline{S_{ml}}$ constitutes the average monthly net salary at national level;
- $\overline{R_ș}$ constitutes the unemployment rate at national level.

A high unemployment rate would negatively influence not only the level of employability, but also the degree of economic development. This is why the average unemployment rate at national level is used in the numerator, while the denominator will use the unemployment rate at regional level. A higher unemployment rate per region (the denominator) than that of the national average (numerator) determines a superunitary proportion, which signifies an erroneous increase in the I_d index. For the observation of regional disparities, the values for other three indices/coefficients will be calculated, respectively: Herfindahl index (H_j), Gini Index (G) and Theil index (T). Herfindahl index (Pecican, 2009, p. 6; Zaman et al., 2013, pp. 24-25) is determined by the formula shown in the equation (2).

$$I_C = \sum_{i=1}^{n} g_i^2, \qquad \frac{1}{n} \leq g_i \leq 1,$$

(2)

where:
- g_i represents the share of region i in the total under discussion.

The Gini index (Anghelache et al., f.a., p. 46) is determined by the formula shown in the equation (3).

$$G = 1 + \frac{1}{n} - \frac{2}{n^2 y}(y_1 + 2y_2 + 3y_3 + \cdots + ny_n)$$

(3)

where:
- $y_1, y_2, 3y_3, \ldots y_n$ represents individual income classified in descending order;
- n represents the number of individuals/units analysed;
- $\overline{y}$ represents the average income.

Initially, the Gini index was used to measure inequalities of revenue distribution, but its formula became generic, applying for a number of economic indicators.

The Theil index (Novotný, 2007, p. 565) is determined by the formula in the equation (4).

$$T = \frac{1}{n}\sum_{i=1}^{n} \frac{x_i}{\bar{x}} \ln \frac{x_i}{\bar{x}},$$

(4)

where:

- T represents the general inequality of income;
- n represents the size of the population/units studied;
- x represents the average per capita income;
- x_i represents the i person's income.

In the case of this index, too, the use has been extended, applying for several economic indicators. For the determination and measurement of the composite Index of regional disparity and of the three inequalities/coefficients (Theil, Gini, Herfindahl), we use the following statistical data for the NUTS II level. Thus, at NUTS II level, the evolution of the unemployment rate in Romania is given in Table 1. It can be observed that at national level, in the year 2013, there was an increase in unemployment rate by 0.3%, then, in 2014, the unemployment rate had the same value as in 2012 (5.4%), following a gradual decrease in the coming years. Also in the year 2013 the unemployment rate increased compared to the previous year and at the level of Regions: Centre, North-East, South-East, South-Muntenia, South-west Oltenia, West. Only in the North-West Region there was a downward trend during the analysis period (2012-2016). At the end of 2016, the lowest unemployment rate was recorded in the Bucharest-Ilfov region (1.5%), and the highest was in the South-West Oltenia region (8.3%, higher than in 2012, 2014 and 2015 with 0.1%). With a decrease of 1.8%, the Centre Region is notable as the region with the most significant reduction in unemployment rate, which could mean an effective implementation of labour market development strategies.

Table 1. Evolution of unemployment rate at NUTS II level, 2012 – 2016, U.M. percent (data taken by the author from the database of NIS Romania)

Region (NUTS II)	2012	2013	2014	2015	2016
Romania	**5.4**	**5.7**	**5.4**	**5**	**4.8**
North-West	4.4	4.1	3.8	3.4	3.2
Centre	6.2	6.3	5.5	4.7	4.4
North-East	6	6.6	6.6	6.3	6.5
South-East	6.4	6.7	6.9	6.6	6.7
South-Muntenia	6.9	7.5	7.3	6.6	6.3
Bucharest-Ilfov	2	2	1.9	1.8	1.5
South-West Oltenia	8.2	8.7	8.2	8.2	8.3
West	3.9	4	3.4	3	2.6

As can be seen from Tables 1 and 2, unemployment rate values differ depending on the databases from which they were taken. The ones taken from the Eurostat website are higher than those made available by the National Institute of Statistics of Romania (NIS). This can be explained by the use of different calculation methods. Eurostat calculates the unemployment rate on harmonised bases, using the Denton proportional method, which is a method of disaggregation. In calculating unemployment, "the minimization problem is applied to the differences between any two consecutive benchmark factors, which are here calculated as the monthly unemployment level proxied by the quarterly value of the LFS (X_t) divided by the registered unemployment I_t, with respect to X_t" (5) (European Commission):

$$\min_{(x1,x2...x\beta)} \sum_{t=2}^{3\beta} \left[\frac{X_t}{I_t} - \frac{X_{t-1}}{I_{t-1}}\right]^2 \quad t \in \{1,...(3\beta)\} \quad subject\ to \quad \frac{1}{3}\sum_{3q-2}^{3q} X_t = K_q \quad for\ each\ q$$

(5)

where:
- K_q = level of quarterly benchmark (LFS) for quarter q;
- I_t = level of indicator for month t;
- t = time, where t =3q-2 is equal to the first month of quarter q, t=3q is the third month of quarter q;
- β = last quarter q for which the quarterly benchmark (LFS) is available.

The National Institute of Statistics of Romania uses another method of calculation to identify the value of the unemployment rate, namely "the ratio between the employed population and the total population aged 15-64 years, expressed as percentage" (NIS). As regards the ranking of the Regional Competitiveness Indicator (ICR) carried out by the European Commission, NUTS II of the EU comprises 276 regions. By identifying the levels of unemployment rates for NUTS II, EUROSTAT provides statistical data for 474 positions. Classifying the regions in the Excel Document generated according to value (1 – Lowest unemployment position, 474 – the position with the highest unemployment rate), we find that Romania's Development Regions occupy a better place than the EU-28 average (Table 2). According to Eurostat, the North-East region is the region of Romania with the lowest unemployment rate, in the year 2016, in the 16th place of 474 positions. The places of Romania's regions for the unemployment rate suggest that Romania is not as bad as people think regarding the unemployment rate, but in the period from 2012 to 2016, the oscillations of the unemployment rate is significant, in 2016 Romania getting a greater place than the years 2012-2014.

Table 2. Ranking of Romania's Development Regions, period 2012-2016 (data taken by the author from the Eurostat database and synthesized by the author)

Region (NUTS II)	2012		2013		2014		2015		2016	
	$R_{\text{ș}}$ (%)	Rank	$R_{\text{ș}}$ (%)	Rank	$R_{\text{ș}}$ (%)	Rank	$R_{\text{ș}}$ (%)	Rank	$R_{\text{ș}}$ (%)	Rank
European Union (28 countries)	10.5	317	10.9	320	10.2	313	9.4	300	8.6	293
Romania	6.8	157	7.1	158	6.8	169	6.8	199	5.9	187
North-West	4.6	57	4.1	37	3.8	29	4.6	83	4.3	81
Centre	9.5	288	9.5	275	9.2	282	7.4	221	5.2	153
North-East	4.2	42	4.4	47	4.2	45	3.6	29	3.0	16
South-East	9.4	277	9.5	276	10.4	317	9.0	281	7.7	263
South-Muntenia	9.5	289	9.5	277	9.0	274	10.3	339	8.9	307
Bucharest-Ilfov	6.5	142	8.0	208	7.2	184	5.3	117	4.7	108
South-West Oltenia	6.1	119	7.0	155	6.5	154	10.1	334	9.9	341
West	5.1	77	5.2	72	4.8	70	5.4	124	4.9	125

4. RESULTS AND DISCUSSIONS
In Romania, the decrease of the unemployment rate is looked on with skepticism, given the huge number of unemployed people and the acute lack of work places.

Although the unemployment rate a the end of 2016 at national level was of only 4.8%, the Regional Development Strategies still focus on iminishing the unemployment rate. The subjective disparities regarding the decreased unemployment rate compared to the underdeveloped national economy nd the great number of unemployed people could be caused by the faulty system of registering of all unemployed people within County Agencies for Emlpoyment. Although there are no studies about this matter, we can state that there are people without a job, but also many high-school and college graduates who refuseto be taken into account as unemployed people. In Table 3 there is a systematic presentation of the values of the Composite index of regional disparity (I_d), taking into consideration the unemployment rate, for the years 2012 and 2014, at the level of NUTS II. There years have been chosen as reference years because at the level of NUTS III there are no known values for the indicator of GDP/inhabitant and, in the future, analysis is desired of the disparities concerning the unemployment rate at the level of NUTS III. We notice that:

- in the North-West Region in 2014, the Composite index of the regional disparity (I_d), taking into account the unemployment rate, overcomes the national average by 4.6% ($I_d = 1.046$) and it is higher than the one registered in 2012 by 9% ($I_d = 0.956$);
- in the Centre region in 2014, the Composite index of the regional disparity (I_d), taking into account the unemployment rate, is higher that the one registered in 2012 by 3.5% (in 2012 $I_d = 0.862$; in 2014 $I_d = 0.897$) and under the ntional average by 10.3%;
- in 2014, in the North-East Region, the Composite index of the regional disparity (I_d), taking into account the unemployment rate, has a value by 34.9% smaller than the national average ($I_d = 0.651$); in 2012, its value is by 2.9% higher than that of 2014($I_d = 0.680$);
- in the South-East Region, the Composite index of the regional disparity (I_d), taking into account the unemployment rate, is higher in 2012 ($I_d = 0.795$) by 1.5% than that of 2014 ($I_d = 0.780$), and the value of this index is by 22% lower in 2014 than the corresponding national average;
- in the South-Muntenia Region, the value of the Composite index of the regional disparity (I_d), taking into account the unemployment rate, in 2014 ($I_d = 1.269$) overcomes by 26.9% the national average and it is by 3% lower than that registered in 2012 ($I_d = 1.299$);
- in the Bucharest-Ilfov region, the value of the Composite index of the regional disparity (I_d), taking into account the unemployment rate, was higher in 2014 than in 2012. In each of the two years it was located above the national average (by 83.9% in 2014 and by 73.5% in 2012);
- in the South-west Oltenia region, Composite index of the regional disparity (I_d), taking into account the unemployment rate, is 34.8% lower than the national average ($I_d = 0.652$) in 2014;
- in the West region, the value of the Composite index of the regional disparity (I_d), taking into account the unemployment rate, is above the national average in the year 2012 (with 18.2%, $I_d = 1.182$) and in 2014 (by 22.8%, $I_d = 1.228$).

Table following on the next page

Table 3. The composite index of regional disparity (I_d), considering the unemployment rate (NUTS II level, 2012/2014) (author calculations)

Region (NUTS II)	2012	2014
North-West	0.956	1.046
Centre	0.862	0.897
North-East	0.680	0.651
South-East	0.795	0.780
South-Muntenia	1.299	1.269
Bucharest-Ilfov	1.735	1.839
South-West Oltenia	0.675	0.652
West	1.182	1.228
Romania	**1.000**	**1.000**

Regional disparities can also be identified by calculating and interpreting the values of the indices H_j, G and T based on the values obtained for the indicators: unemployment rate, GDP, GDP/inhabitant and Composite index. According to the Calculations (Table 4), it is found that between regions there are:

- Low concentration, as the H_j has a minimum limit of 0.125 (1/8 regions), and the values obtained for the four indicators are close to this minimum limit; these values are slightly higher in 2014 than those recorded for 2012, except for the values of the composite index;
- Insignificant disparities, because the values of the G and T indicators are close to the lower limit of the set ranges (0 -1 for the Gini coefficient, 0 – 2.079 for the Theil index).

Table 4. Degree of concentration and inequity index for unemployment rate, GDP, GDP/inhabitant and Composite Index (I_d), NUTS II, Romania, 2012/2014 (author calculations based on data provided by NIS in Romania)

Name of indicator	Interval	Unemployment rate		GDP		GDP/inhabitant		I_d	
		2012	2014	2012	2014	2012	2014	2012	2014
Herfindahl index	(0.125;1)	0.1388	0.1428	0.1486	0.1507	0.1549	0.1556	0.1388	0.1385
Gini Coefficient	(0;1)	0.1258	0.1428	0.1642	0.1716	0.1851	0.1870	0.1259	0.1242
Theil index	(0; ln8) = (0;2.079)	0.0620	0.0790	0.0769	0.0849	0.0964	0.0980	0.0521	0.0504

For RCI, 79 indicators were targeted, but for the actual realization of calculations, only 74 indicators were used, 5 being removed because they were considered insignificant. As regards RCI values for 2016, at NUTS II level, of the 263 regions analysed by the European Commission, Romania is at the bottom of the board. The South-Eastern Region is the penultimate region, with a rank of 262 of 263 and a percentage equal to 0.1. The region with the highest score for the RCI indicator is the Region of Bucharest-Ilfov (45.4%), getting place 161 of 263 (Table 5). Analyzing the GDP/inhabitant indicator, the Bucharest-Ilfov Region remains the region with the highest registered value (128) of the 8 regions of Romania, on the 38th place, and the North-East Region is on the 260th place, with a value of 34.

These values classify the Bucharest-Ilfov Region as having a stage of development of 5, while the Centre and West Regions have stage 2 development and the other 1.

Table 5. RCI, GDP per head and Stage of development for the Romanian regions, 2016 (data taken from Regional Competitiveness Index 2016. Scorecards, pp. 208-2015, pp. 208-2015, and processed by the author)

Region (NUTS II)	RCI		GDP per head		Stage of development
	%	**Rank**	**PPS**	**Rank**	
North-West	11.9	241/263	47	249/269	1
Centre	8.2	246/263	51	244/263	2
North-East	6.4	251/263	34	260/263	1
South-East	0.1	262/263	48	247/263	1
South-Muntenia	5.7	254/263	42	254/263	1
Bucharest-Ilfov	45.4	161/263	128	38/263	5
South-West Oltenia	5.6	255/263	40	257/263	1
West	13.2	240/263	57	231/263	2

For each of the three dimensions (elemental, efficiency and innovation), the highest score was obtained in the region of Bucharest-Ilfov, being placed in 238 for the Elemental dimension, 112 for efficiency and 159 for innovation (Table 6). Ranked in the last places, Romania's regions have many steps to make to evolve and have a higher stage of development.

Table 6. Romanian regions depemding on the three dimensions according to RCI, 2016 (data taken from Regional Competitiveness Index 2016. Scorecards, pp. 208-2015, pp. 208-2015, and processed by the author)

Region (NUTS II)	Basic dimension		Efficiency dimension		Innovation dimension	
	Score	**Rank**	**Score**	**Rank**	**Score**	**Rank**
North-West	4.4	256/263	41.7	220/263	8.7	254/263
Centre	6.9	250/263	36.1	231/263	6.8	256/263
North-East	3.2	261/263	36.6	229/263	1.5	262/263
South-East	0.0	263/263	29.2	250/263	1.8	261/263
South-Muntenia	6.3	252/263	33.9	237/263	2.4	260/263
Bucharest-Ilfov	13.7	238/263	67.3	112/263	42.3	159/263
South-West Oltenia	4.0	258/263	35.5	233/263	0.0	263/263
West	4.3	257/263	41.5	221/263	14.5	247/263

As such, the effectiveness of Romania's regions regarding the labour market is not a uniform one, with significant discrepancies between the eight regions in this regard. According to the objectives of the Europe 2020 strategy, each country within the European Union must have 75% of the population employed, significantly reducing the unemployment rate and thus increasing the living standards of many Romanians, especially as the strategy specifies that "the number of people threatened by poverty should be reduced by 20 million" (European Commission, 2010, p. 5). At the end of 2016, the value of the employment rate in Romania was 66.2%, which means that in 4 years Romania will have to increase the value of this indicator by 8.8%. It is a difficult value to achieve if we take into consideration the previous progress of the country in this chapter (in the period 2012-2016 the employment rate increased from 61.1% (year 2012) to 66.2% (year 2016)). The unemployment rate did not decline substantially between 2012-2016, going from 5.4% in 2012 to 4.8% in 2016. Consequently, recent evolutions of the employment rate and unemployment rate indicators do not provide optimistic forecasts concerning the achievement of the values set out in the Europe 2020 strategy. In order to achieve the objectives, Romania needs innovative strategies to ensure economic and social success, so

that "innovation strategies should be observed as one of the major factors in obtaining and achieving competitiveness" (Cingula, Veselica, 2010, p. 27).

5. CONCLUSION

The current economic situation at the level of Romania's development regions is still below the level of development imposed by the European Union. The region of Bucharest-Ilfov is the most developed, while the North-East region is on the last place. Therefore, the targets provided for in the Europe 2020 strategy, aimed at employment and unemployment, should also be achieved by Romania, so that the objectives can be achieved at the level of the 8 regions, so that there are no significant discrepancies between the unemployment rate and the employment rate. On the other hand, it is also necessary to improve the working conditions as "the working conditions actually lead to productivity increases and general positive output results, since job quality is a core element used to boost economic growth towards the objectives set within the The framework of Europe 2020 agenda" (Noja and Cristea, 2017, p. 70). The prospects for economic and social development of Romania's development regions are in conjunction with the development objectives of the Europe 2020 Strategy. They are not impossible to achieve as long as the most effective measures are taken to increase employment rate, reduce unemployment rate, increase competitiveness, increase GDP/inhabitant (Cristea et al, 2010), the living conditions of the Romanians depending entirely on the involvement of the authorities responsible for a real increase of the economy, not at all forced.

LITERATURE:

1. Anghelache, C., Isaic-Maniu A., Mitruț C., Voineagu, V. (2006). Sistemul de indicatori utilizați în măsurarea sărăciei (The system if indicators used in measuring poverty). Retrieved 20.12.2017 from http://store.ectap.ro/articole/135.pdf.
2. Borozan, D. (2008). Regional Competitiveness: Some Conceptual Issues and Policy Implications. *Interdisciplinary Management Research*, Josip Juraj Strossmayer University of Osijek, Faculty of Economics, Croatia, vol. 4, 50-63, May.
3. Cingula, M., Veselica, R. (2010). Contribution of Innovation Strategies to Entrepreneurial Competitiveness. *Acta Technica Corviniensis-Bulletin of Engineering. Romania: Faculty of Engineering Hunedoara*, 27-32.
4. Comisia Europeană (2014). Investiții pentru locuri de muncă și creștere. Promovarea dezvoltării și a bunei guvernanțe în regiunile și orașele UE. Al șaselea Raport de coeziune economică, socială și teritorială (Investments for work places and increase. The promotion of development and good governance in EU regions and cities. The sixth Report of economic, social and territorial cohesion). Bruxelles. Retrieved 20.12.2017 from http://ec.europa.eu/regional_policy/sources/docoffic/official/reports/cohesion6/6cr_ro.pdf.
5. European Commission (2010). Comunicare a Comisiei Europa 2020. O strategie europeană pentru o creștere inteligentă, ecologică și favorabilă incluziunii. Bruxelles. Communication of the Commission Europe 2020 (An European strategy towards an intelligent, ecological increase favourable to inclusion). Retrieved 20.12.2017 from https://www.mae.ro/sites/default/files/file/Europa2021/Strategia_Europa_2020.pdf.
6. Cristea, M., Dracea, R., Marcu, N. (2010). The direction of the financial sectors involvement in overcoming crisis: A case study of Romania. *African Journal of Business Management*, *4*(15), 3356-3365.
7. European Commission (2007). European Competitiveness Report 2007. Retrieved 20.12.2017 from https://publications.europa.eu/en/publication-detail/-/publication/231e7f69-4cb9-4bbb-aef3-eb965d255281.

8. European Commission (2016). European Regional Competitiveness Index. Retrieved 20.12.2017 from
    http://ec.europa.eu/regional_policy/en/information/maps/regional_competitiveness/.
9. Eurostat. Retrieved 20.12.2017 from http://ec.europa.eu/eurostat/web/lfs/data/database.
10. Goschin, Z., Constantin, D. L., Roman, M., Ileanu, B. (2008). The Current State and Dynamics of Regional Disparities in Romania. *Romanian Journal of Regional Science*, vol. 2, no 2, 80-105.
11. Institutul European din România (The European Institute of Romania) (2003). Politica de dezvoltare regională (The development policy). Retrieved 20.2.2017 from
    http://beta.ier.ro/documente/formare/Politica_regionala.pdf.
12. Institutul Național de Statistică din România (The Romanian National Institute of Statistics). Retrieved 20.12.2017 from http://insse.ro.
13. Lolescu, E. (2009). Capitolul 2. Disparități în Dezvoltarea Regională (Chapter 2. Disparities in Regional Development). Retrieved 20.12.2017 from
    http://audieri.advocacy.ro/sites/audieri.advocacy.ro/files/files/pagini-audiere/documente_conexe/2012-11/2009_-_disparitati_in_dezvoltarea_regionala_cap_2_lolescu_elena_ro.pdf.
14. Noja, G. G., Cristea, M. (2017). Working Conditions as Key Drivers of Economic Growth: Empirical Evidence For Europe, *21st International Scientific Conference on Economic and Social Development Belgrade*, Serbia, 18-19 May 2017, 59-71.
15. Novotný, J. (2007). On the measurement of regional inequality: does spatial dimension of income inequality matter?. *The Annals of Regional Science*, 41:563–580. DOI 10.1007/s00168-007-0113-y. Retrieved 20.12.2017 from
    http://web.natur.cuni.cz/~pepino/NOVOTNY2007AnnalsofRegionalScience.pdf.
16. Pecican, E. Șt. (2009). Indicatori privind convergența reală și aplicațiile acestora (Indicators concerning the real convergeance and applications). Bucharest. Retrieved 20.12.2017 from http://www.studii-economice.ro/2009/seince091004.pdf.
17. Postoiu, C., Bușega, I. (2015). Inter-Regional Disparities in the European Union. *Romaniain Review of Regional Studies*, Volume XI, Number 1. Retrieved 20.12.2017 from http://rrrs.reviste.ubbcluj.ro/arhive/Artpdf/v11n12015/RRRS11120151.pdf.
18. Puljiz, J., Maleković, S. (2007), January. Regional income and unemployment disparities in Croatia. In *7th International Conference" Enterprise in transition"*. Split, Croatia.
19. Zaman, G, Goschin, Z., Vasile, V. (2013). *Evoluția dezechilibrelor teritoriale din România în contextul crizei economice* (Evolution of territorial disparities in Romania in the context of economic crisis). *Revista Română de Economie,* 2.46, 20-39. Retrieved 20.12.2017 from http://revecon.ro/articles/2013-2/2013-2-2.pdf.
20. *** The EU Regional Competitiveness Index 2016. Retrieved 20.12.2017 from http://ec.europa.eu/regional_policy/sources/docgener/work/rci2016_scorecards.pdf.

THE INFLUENCE OF SERVQUAL MODEL AND ATTITUDE ON CUSTOMER'S SATISFACTION AND LOYALTY IN ISLAMIC BANKS OF SAUDI ARABIA IN DEVELOPING COUNTRIES

Feras Mohammad Alnaser
Technical and Vocational Training Corporation,
Hafar Albatin collage of technology, Saudi Arabia
Marketing Lecturer
sunvictory5@gmail.com

ABSTRACT

The purpose of this study was to extend the SERVQUAL model with attitude and to investigate the customer satisfaction and customer loyalty for Islamic Banks. This study used survey method where data was collected from 500 respondents through a questionnaire survey. Structural equation model (SEM) was applied to check the hypothesis relationship between proposed constructs. Finding revealed that the extended model has significant impact on customer satisfaction and customer loyalty in Islamic banks of Saudi Arabia. Furthermore, this study unearths certain areas that were not previously discussed in Arab cultural context such as attitude. The findings of this study will be helpful for Managers and policy makers to improve the service quality in Islamic Banks of Saudi Arabia. Extension of this study in other developing countries is recommended as this study was contextualized in Saudi Arabia cultural context.
Keywords: *SERVQUAL, Attitude, Customer Satisfaction, Customer Loyalty, Cultural Context, Structural Equation Modeling (SEM)*

1. INTRODUCTION

Services are increasingly becoming a large portion of any organization and being considered as indispensable tool for revenue stream (Dhandabani, 2010). Service quality has been defined as the customer expectations and perception of actual service (Parasuraman, Zeithaml, & Berry, 1985). According to Grönroos (1984) defined service quality as the outcome of the comparison that consumer make between their expectation and perception. In banking industry service quality plays a vital role in improving of customer satisfaction (S Rahi, 2016; S. Rahi & M. Ghani, 2016). The findings of Teas (1994) suggest that long-term relationship and customer satisfaction can build by providing high service quality to customers. In banking industry Thompson et al. (1982) study explained that strong relationship between banks and customers builds customer loyalty which give competitive advantage to banks. The practitioners believe that service quality can increase the performance of a firm (Grönroos, 1984; Kashif, Abdur Rehman, & Pileliene, 2016; Kyoon Yoo & Ah Park, 2007; RAHI, YASIN, & ALNASER, 2017; Rahi Samar, Mazuri Abd Ghani, & ALNASER, 2017). However, service quality and customer satisfaction interchangeable terms (Kyoon Yoo & Ah Park, 2007). Previous studies have suggested that service quality is positively associated with customer satisfaction in banking industry of Pakistan (Kashif et al., 2016; RAHI et al., 2017). Furthermore, considerable amount of work has been done in service industry in order to understand the dimensions of service quality and customer satisfaction (Chumpitaz & Paparoidamis, 2004; Pantouvakis, 2013; S. RAHI & M. A. GHANI, 2016). Rapid rise in financial sectors has provided alternatives to customers (Dhandabani, 2010). Service quality has played an important role in order to increase sales profit, market share, development of good image, and to provide competitive advantage (Dhandabani, 2010). However the measurement of service quality has become the most difficult task for organization.

Following above arguments this study is measure impact of service quality on customer satisfaction and loyalty in banking context of Saudi Arabia. Therefore, three objectives are as follows:
1. To examine the condition of service quality in Islamic Banks of Saudi Arabia.
2. To analyze factors that led to customer satisfaction in Islamic Banks of Saudi Arabia.
3. To find mediating role of customer satisfaction between SERVQUAL and customer loyalty.

Despite the existing literature on service quality, fewer studies have been conducted on service quality that examine the customer satisfaction and customer loyalty in Saudi Arabia banking sector. To the best of researcher knowledge, up till now there is no such study that extended the SERVQUAL model with attitude. In this study, researcher used the modified model SERVQUAL and extended it with attitude in order to measure the customer satisfaction and customer loyalty of Saudi Arabia Islamic banking customers. SERVQUAL model was developed and tested in western culture consequently it cannot measure the service quality issues faced by developing countries (Raajpoot, 2004). Attitude is the second factor of theory of reasoned action (TRA) and measure the behaviors within human action. Thus, it is believed that to extend SERVQUAL model with attitude would be significant and provide a platform to discuss the service quality issues in Islamic banks of Saudi Arabia.

2. LITERATURE REVIEW
2.1. Service Quality in Banking
In last few decades, service quality has received a great attention from both academic and practitioners. Customer expectation's serves as a foundation of service quality. Additionally, it is assumed that high quality and performance exceeds expectation while low quality performance does not meet the expectation. In services marketing SEVEQUAL model has been used widely for measuring of service quality. Several researcher have been used SERVQUAL model for measuring of service quality in banking sector (Kashif et al., 2016; Marković, Jelena, & Katušić, 2015; S. RAHI & M. A. GHANI, 2016; Rahi Samar et al., 2017). Like other models SERVQUAL model was also criticised (Raajpoot, 2004). With passage of time SERVQUAL was extended by several researchers (Avkiran, 1999; Bahia & Nantel, 2000; Raajpoot, 2004).

2.2. SERVQUAL
According to Zeithaml, Berry, and Parasuraman (1996) the measurement and achievement of service quality has been advantageous for the firm due to several reasons such as lower cost, customer loyalty and increased market share. Thus, for the measurement of service quality in Islamic banks of Saudi Arabia, this study have used the most popularised service quality model; SERVQUAL. The revolutionary SERVQUAL model was developed by Parasuraman et al. (1985). Initially the model was comprised with 10 dimensions, which further reduce to five dimensions. There are five core dimension of SERVQUAL model, namely tangibility, reliability, assurance, empathy and responsiveness. The key definition of these five dimensions as follows:
1. Tangibility is seen as appearance of physical facilities, equipment, personnel, and communication material (Parasuraman et al., 1985).
2. Reliability is defined as the ability to perform the promised service dependably and accurately (Parasuraman et al., 1985).
3. Assurance is defined as the courtesy of employees and their ability to inspire trust and confidence (Parasuraman et al., 1985).
4. Responsiveness is defined as employee willingness to guide customers and look fully engaged while service is performed (Parasuraman et al., 1985).

5. Empathy is defined as employees pay full attention to customers during service delivery (Parasuraman et al., 1985)

These five dimensions have been used to develop a service quality model named SERVQUAL. Although the SERVQUAL model has been criticised by several researcher but it is still widely used in service marketing (Marković et al., 2015). This scale has been extensively used by service marketing researchers in USA and European countries. In banking context Cai, Zhang, Kumar, and Wyman (2014) have employed SERVQUAL model to investigate service quality of Malaysian banks. Raajpoot (2004) has extended the SERVQUAL model in cultural context and incorporated three dimensions of SERVQUAL model named; tangibility, reliability, and assurance in newly developed PAKSERV model. Several studies has proved significant relationship of SERVQUAL relationship with customer satisfaction and customer loyalty (Kashif et al., 2016; Marković et al., 2015). Keeping these contribution in mind the following hypothesis are proposed
H1: Tangibility is significantly influence on customer satisfaction
H2: Reliability is significantly influence on customer satisfaction
H3: Assurance is significantly influence on customer satisfaction

2.3. Attitude

Behaviour intention is defined as consumer readiness and likelihood to use mobile commerce services (Peña & Brody, 2014; Ajzen, 1991). In this study, behavior intention is the only dependent variable. Prior studies identified many factors that might affect behavior intention. Ajzen and Fishbein (1980) in their theory of reasoned action (TRA) suggested that both attitude and subjective norms are capable of affecting human behavior intention. According to the TRA, attitude consists of attitudinal beliefs about the consequences of performing the behavior weighted by one's valuation of the consequences (Ajzen & Fishbein, 1980; Fishbein & Ajzen, 1975). Meanwhile subjective norm is defined as "the person's perception that most people who are important to him or her think he should or should not perform the behavior in question" (Fishbein & Ajzen, 1975), Thus, the following hypothesis is proposed:
H4: Attitude is significantly influence on customer satisfaction

2.4. Customer Satisfaction

Satisfaction is attributed to a customer's feelings of happiness when his/her expectations met by the service provider. In service management literature customer satisfaction can be defined as being a summary of cognitive and affective reaction to a service incident or to a long-term service relationship (Lee, Kim, Ko, & Sagas, 2011). According to Ueltschy, Laroche, Zhang, Cho, and Yingwei (2009) customer satisfaction is the response of the customer who evaluate his or her prior expectations and actual performance of the product/service. Globally, customer satisfaction has been considered a powerful intangible asset for competitive advantage (Ueltschy et al., 2009). In other words customer satisfaction or dissatisfaction in services marketing is result of the customer's expectation encounters with a service quality. The customer's life time loyalty with the service offered depends heavily on their satisfaction (Oly Ndubisi, 2007). Service quality has been identified as key strategy for increased level of customer satisfaction (Lee et al., 2011). It is said that both customer satisfaction and service quality perception positively impact the repurchase intention of the customer (Lee et al., 2011; Oliver, 1997). Marković et al. (2015), clarified that service quality influence on customer satisfaction and customer loyalty. Thus, the following hypothesis is proposed:
H5: Customer satisfaction is significantly influence on customer loyalty

2.5. Customer Loyalty

Service quality is an effective tool to keep customers loyal to the bank. According to Baumann, Elliott, and Hamin (2011), loyalty is an attitude as well as specific behavior. Customer loyalty has been an important element to increase firm profitability (Oliver, 1997). Customer loyalty has been defined as; "a deeply held commitment to re-buy or re-patronize a preferred product consistently in the future situational influences and marketing efforts that might cause switching behavior" (Oly Ndubisi, 2007). Regardless of the service quality measurement, it is evident that service quality influences customers' perceived value, satisfaction, and loyalty (Marković et al., 2015). The behavioural loyalty reflects customer's positive response to purchase a particular product or service (Amin, Isa, & Fontaine, 2013; Rahi, 2015; Samar Rahi, 2016; S. RAHI & M. A. GHANI, 2016). The customers who are loyal with banks spend much more than other customers (Amin et al., 2013). Several studies confirmed that loyalty in banking sector have attributed as function of customer satisfaction (Amin et al., 2013; Ladhari, Ladhari, & Morales, 2011). Thus, the following theoretical framework is proposed

Figure 1: Theoretical Framework
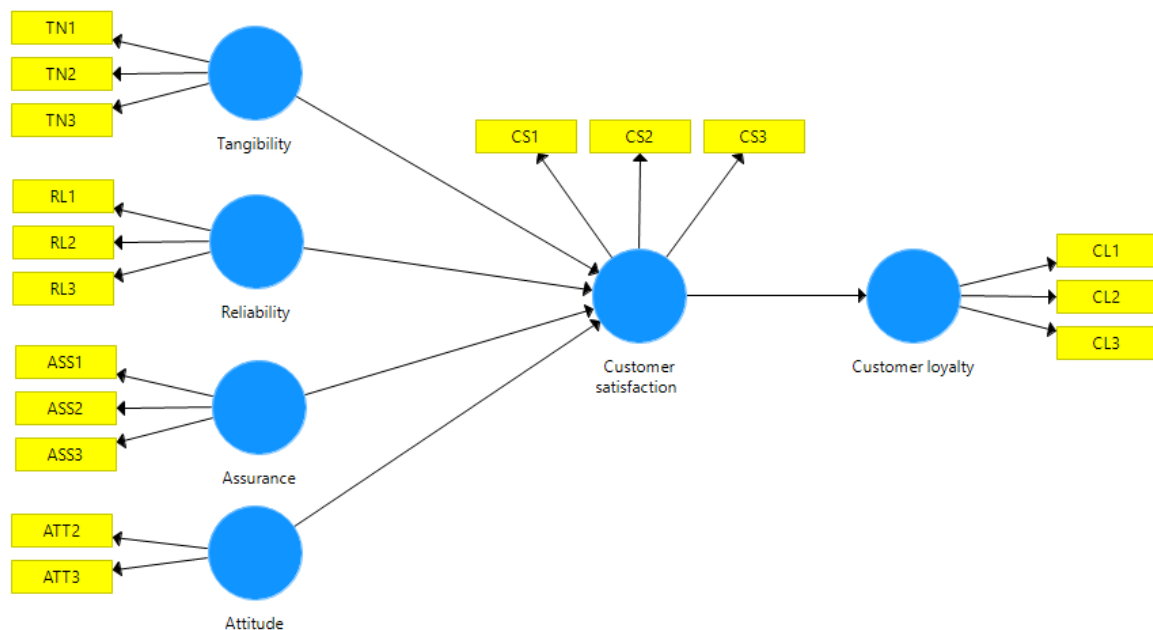
3. METHODOLOGY

The study has planned to examine service quality in Islamic banks of Saudi Arabia by extending SERVQUAL model with attitude and customer satisfaction. Bear in mind the criticism on SERVQUAL model, researcher used the three dimensions of SERVQUAL model as suggested by (Raajpoot, 2004). A survey-based research design employed to achieve the objective of the study.

3.1. Instrument Development

The survey had two parts. The first part comprised on dimensions of SERVQUAL model, attitude, customer satisfaction and customer loyalty. The three dimensions of SERVQUAL model had 9 items and adapted from previous developed scale by A. Parasuraman, Zeithaml, and Berry (1988). The attitude consisted of 2 items adopted from previous study by Samar, S., Ghani, M., & Alnaser, F. (2017). Customer satisfaction consisted of 3 items adapted from Sayani (2015).

Lastly, 3 items of customer loyalty adopted from RAHI et al. (2017). All the items anchored on a 7-point Likert scale "1= strongly disagree to 7 strongly agree)". The second part comprised of respondent demographics such as age, gender and education.

3.2. Survey Design and Sampling
The context of the study was Islamic Banks of Saudi Arabia. The survey was self-administered for collect the data of Islamic bank customers located in the city of HafarAlbatin, Saudi Arabia. Before conducting the survey, researcher took the permission from manager to collect the data inside of bank. Convenience sampling method was used in this study. Convenience sampling defined as a process of data collection from population that is close at hand and easily accessible to researcher (Rahi, 2017). According to J. F. Hair (2003) illustrated that convenience sampling allows researcher to complete interviews or get responses in a cost effective way. Thus, for data collection researcher personally visited AL Rajhi Bank and requested to customers to fill the questionnaire. The required sample size was 500. A set of 600 structured questionnaires were distributed out of 500 useable responses were received from customers of Islamic Banks.

3.3. Respondent's Profile
Table 1 summarised the demographics of the sample selected to achieve the purpose of this study. Males were (100%) because the researcher cannot visit the female branches as a restriction and the cultural of local community. The age of the respondents 34.0% is for less than 20 years old, 36.4% that counts at age between 21 to 30 years, 19.2% for 31 to 40years and 10.4% respondents aged 41 to 50. Furthermore, Table 1 also depicted that education of the respondents 3.0% respondents were having high school education, 8.2% from those who has diploma, 11.6% respondents who has bachelor degree, 49.4% master level education while there were 27.85 respondents were with PhD degree.

Table 1: Demographic Profile of the Respondents

Demographic Characteristics	Frequency	Percentage (%)
Gender		
Male	500	100.0
Age		
Less than 20 years	60	12.0
21-30 years	227	45.4
31-40 years	113	22.6
41-50	100	20.0
Education		
High School and Below	18	3.6
Diploma	82	16.4
Bachelor	253	50.6
Master	106	21.2
PhD	41	8.2

3.4. Measurement Model
To examine the research model Partial Least Square (PLS) analysis technique was employed by using the SmartPLS3.0 software Ringle, Wende, and Becker (2015).In an effort to refine all structural equation model two-stage analytical procedure was employed ,where researcher tested the measurement model and structural model recommended by F. Hair Jr, Sarstedt, Hopkins, and G. Kuppelwieser (2014). Prior to structural modelling study has to assess the measurement model of latent construct for their dimensionality, validity, and reliability by going through the process named as confirmatory factor analysis (RAHI et al., 2017). Cronbach's (α) and Composite Reliability is also tested as recommended by Henseler, Ringle, and Sinkovics (2009).

Furthermore in order to check the validity of the constructs convergent and discriminant validity was also examined. Convergent validity of measurement model is usually ascertained by examining the factor loading, average variance extracted and compost reliability (J. F. Hair, Black, W. C., Babin, B. J., Anderson, R. E. & Tatham, R. L. , 2010; Rahi, 2017). Figure 2 shows the results of factor loadings as recommended by Chin (1998) threshold level of 0.6. All the values were above than 0.6 that shows the convergent validity of the model.

Figure 2:Measurement Model
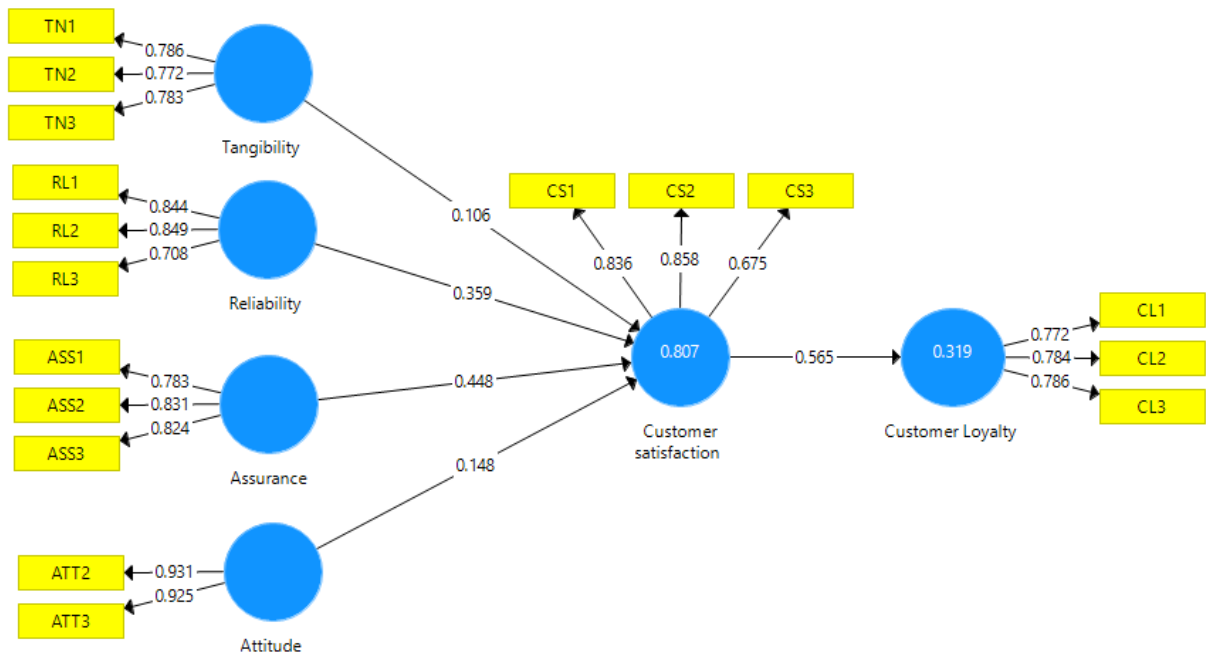
3.4.1. Convergent Validity
According to Fornell and Larcker (1981) convergent validity is measured through estimation of average variance extracted (AVE) and it must be greater than 0.5. The average variance extracted depicts the amount of variance in the indicators accounted for latent construct. Furthermore, Table 2 depicted composite reliability (CR) degree where the construct indicator represent the latent construct, values exceeded 0.7 recommended by J. F. Hair, Black, W. C., Babin, B. J., Anderson, R. E. & Tatham, R. L. (2010).

Table following on the next page

Table 2: Results of Measurement Model

Constructs	Loading	(α)	CR	AVE
Assurance	**ASS**	**0.747**	**0.854**	**0.66**
Islamic Banks offer financially safe investment	0.783			
Employees of Islamic Banks are courteous	0.831			
Employees of Islamic Banks have appropriate knowledge	0.824			
Reliability	**RL**	**0.719**	**0.844**	**0.645**
Employees of Islamic Banks fulfil their promises	0.844			
Service specifications are followed by Islamic Banks	0.849			
Islamic Banks deliver error-free services	0.708			
Attitude	**ATT**	**0.838**	**0.925**	**0.861**
In my opinion, it is desirable to use the banks services.	0.931			
Using bank's W is a pleasant experience.	0.925			
Customer Satisfaction	**CS**	**0.701**	**0.835**	**0.63**
Assuming your entire experience with the Islamic Banks, you are satisfied	0.836			
In general, your satisfaction level related to current Islamic Bank that you are dealing with is high	0.858			
The Islamic Banks exceed your expectations in offering quality services	0.675			
Tangibility	**TN**	**0.699**	**0.824**	**0.609**
The tools and equipment used by Islamic Banks are modern	0.786			
The facilities offered by Islamic Banks are attractive	0.772			
The communication material of Islamic Banks is easy to understand	0.783			
Customer Loyalty	**CL**	**0.697**	**0.824**	**0.61**
I would like to revisit my Islamic Bank that I have already dealt with	0.772			
I recommend my family, friends and relatives to visit the Islamic Bank that I am already dealing with	0.784			
I will spread positive word-of-mouth about my Islamic Bank and its high quality of services	0.786			

3.4.2. Discriminant Validity

Discriminant validity is the degree where items differentiate among constructs and measures distinct concepts Fornell and Larcker (1981). The discriminant validity of the instruments was examined by following Fornell and Larcker (1981) .Table 3 showed that the square root of the AVE as showed in bold values on the diagonals were greater than the corresponding row and column values that indicates the measures were discriminant in this study.

Table 3: Discriminant validity of Measurement Model

Constructs	ASS	ATT	CL	CS	RL	TN
Assurance	0.813					
Attitude	0.605	0.928				
Customer Loyalty	0.555	0.374	0.781			
Customer satisfaction	0.827	0.646	0.565	0.794		
Reliability	0.635	0.475	0.419	0.766	0.803	
Tangibility	0.584	0.537	0.657	0.625	0.496	0.781
Note: Bold values indicate the square root of AVE of each construct						

3.4.3. Cross Loading

Discriminant validity can be measured by examining the cross loading of the indicators Hair Jr, Hult, Ringle, and Sarstedt (2016). It can be done by comparing an indicator's outer loadings on the associated constructs and it should be greater than all of its loading on the other constructs RAHI et al. (2017). Table 4 depicts that all the items measuring a particular constructs loaded higher on that construct and loaded lower on the other constructs that confirms the discriminant validity of the constructs.

Table 4: Loading and Cross Loadings

Items	Assurance	Attitude	Customer Loyalty	Customer satisfaction	Reliability	Tangibility
ASS1	0.783	0.381	0.368	0.532	0.455	0.379
ASS2	0.831	0.704	0.486	0.777	0.516	0.467
ASS3	0.824	0.337	0.481	0.668	0.571	0.566
ATT2	0.508	0.931	0.335	0.612	0.446	0.489
ATT3	0.617	0.925	0.359	0.586	0.436	0.509
CL1	0.546	0.413	0.772	0.548	0.354	0.434
CL2	0.34	0.195	0.784	0.363	0.321	0.59
CL3	0.351	0.201	0.786	0.352	0.291	0.553
CS1	0.747	0.443	0.505	0.836	0.573	0.683
CS2	0.718	0.666	0.5	0.858	0.548	0.469
CS3	0.476	0.42	0.319	0.675	0.74	0.301
RL1	0.452	0.29	0.275	0.612	0.844	0.41
RL2	0.398	0.416	0.287	0.626	0.849	0.295
RL3	0.681	0.437	0.449	0.603	0.708	0.49
TN1	0.387	0.272	0.642	0.403	0.35	0.786
TN2	0.374	0.27	0.618	0.373	0.293	0.772
TN3	0.552	0.608	0.365	0.614	0.469	0.783

3.5. Structural Equation Model

After achieving measurement model the hypothesis were tested by running a bootstrapping procedure with a resample of 1000, as suggested by F. Hair Jr et al. (2014). Table 5 shows the hypothesis results, it can be seen that all five hypotheses have significance relationship with their respective dependant variables. The relationship between assurance to customer satisfaction is supported by H1: (β = 0.448, t = 9.631, p< 0.001). Next to this the relationship between attitude to customer satisfaction is significant by H2: (β = 0.148, t 4.259, p< 0.001). The relationship of H3 showed that customer satisfaction is positively related to customer loyalty by (β = 0.565, t = 16.799, p< 0.001). Similarly, the relationship between reliability to customer satisfaction is supported by H4: (β = 0.359, t = 9.478, p< 0.01). Finally, the results of H5 where tangibility is supported by customer satisfaction by (β = 0.106, t = 3.55 p< 0.001). Thus, all hypotheses are significant. Furthermore, the effect size was also measured with R^2. The R^2 for customer satisfaction was 0.807 and for customer loyalty 0.319, which is acceptable based on the cut-off suggested by (Cohen, 1988).

Table following on the next page

Table 5: Results of Structural Model Analysis (Hypothesis Testing)

Hypothesis	Relationship	B	S.E	t-value	P-value	Result
H1	ASS -> CS	0.448	0.047	9.631	***	**Significant**
H2	ATT -> CS	0.148	0.035	4.259	***	**Significant**
H3	CS-> CL	0.565	0.034	16.799	***	**Significant**
H4	RL-> CS	0.359	0.038	9.478	***	**Significant**
H5	TN-> CS	0.106	0.03	3.55	***	**Significant**
Note: Significance level where, $*p < 0.05$, $**p < 0.01$, $***p < 0.001$.						

4. DISCUSSION

The service quality dimension proposed in this study found significant with respective endogenous variable. The result of reliability, tangibility and assurance is related to previous study conducted by (Yalley & Agyapong, 2017). Supporting with previous argument that the service quality dimensions named reliability, assurance and tangibility are considered as universal service quality dimension (Yalley & Agyapong, 2017). This study found that reliability, tangibility and assurance have significant relationship with customer satisfaction. As the purpose of this study was to integrate the SERVQUAL model with attitude, and findings revealed that attitude has significant relationship with customer satisfaction. The Saudi Arabia region is different to west thus, it is confirmed that attitude played important role in measuring of service quality in Islamic banks of Saudi Arabia. Lastly, the relationship between customer satisfaction and customer loyalty have found significant and results also supported by (Kitapci, Taylan Dortyol, Yaman, & Gulmez, 2013; Raajpoot, 2004; Rahi, 2015).

5. CONCLUSION

Several studies have been conducted to investigate the service quality issues in banking sector in different context. Therefore, current research has two major contributions. First, this study tested the universal SERVQUAL dimension named assurance, tangibility and reliability in Islamic banks of Saudi Arabia. Second, this study also extended the SERVQUAL dimension with attitude in ARAB region such as Saudi Arabia. The newly proposed model collectively impact on customer satisfaction with 70% variance and 33% variance on customer satisfaction to customer loyalty. Thus, this study confirmed a new model that reflects on Arab culture with addition of Saudi Arabia people attitude.

5.1. Limitations and Recommendations

SERVQUAL model has been extended by different researcher however, cultural aspects was ignored in most of these studies (Raajpoot, 2004). Future research may conduct with addition of other cultural dimension such as image and perception. This study has collected the data from one Islamic bank of Saudi Arabia excluding female. In Future researcher should increase the number of Islamic banks and the sample of respondent should represent a great diversity to investigate the possible difference of customer's behaviors.

LITERATURE:

1. Amin, M., Isa, Z., & Fontaine, R. (2013). Islamic banks: Contrasting the drivers of customer satisfaction on image, trust, and loyalty of Muslim and non-Muslim customers in Malaysia. *International Journal of Bank Marketing, 31*(2), 79-97.
2. Avkiran, N. K. (1999). Quality customer service demands human contact. *International Journal of Bank Marketing, 17*(2), 61-74.
3. Bahia, K., & Nantel, J. (2000). A reliable and valid measurement scale for the perceived service quality of banks. *International Journal of Bank Marketing, 18*(2), 84-91.

4. Baumann, C., Elliott, G., & Hamin, H. (2011). Modelling customer loyalty in financial services: a hybrid of formative and reflective constructs. *International Journal of Bank Marketing, 29*(3), 247-267.
5. Cai, C. M., Zhang, T., Kumar, R., & Wyman, C. E. (2014). Integrated furfural production as a renewable fuel and chemical platform from lignocellulosic biomass. *Journal of Chemical Technology and Biotechnology, 89*(1), 2-10.
6. Chin, W. W. (1998). Commentary: Issues and opinion on structural equation modeling: JSTOR.
7. Chumpitaz, R., & Paparoidamis, N. G. (2004). Service quality and marketing performance in business-to-business markets: exploring the mediating role of client satisfaction. *Managing Service Quality: An International Journal, 14*(2/3), 235-248.
8. Cohen, J. (1988). Statistical power analysis for the behavioural sciences. Hillside. *NJ: Lawrence Earlbaum Associates*.
9. Dhandabani, S. (2010). Linkage between service quality and customers loyalty in commercial banks. *International Journal of management & strategy, 1*(1), 1-22.
10. F. Hair Jr, J., Sarstedt, M., Hopkins, L., & G. Kuppelwieser, V. (2014). Partial least squares structural equation modeling (PLS-SEM) An emerging tool in business research. *European Business Review, 26*(2), 106-121.
11. Fauziah, Taib, M., Ramayah, T., & Abdul Razak, D. (2008). Factors influencing intention to use diminishing partnership home financing. *International Journal of Islamic and Middle Eastern Finance and Management, 1*(3), 235-248.
12. Fishbein, M., & Ajzen, I. (1975). Belief. *Attitude, Intention and Behavior: An Introduction to Theory and Research Reading, MA: Addison-Wesley, 6*.
13. Fornell, C., & Larcker, D. F. (1981). Structural equation models with unobservable variables and measurement error: Algebra and statistics. *Journal of Marketing Research*, 382-388.
14. Grönroos, C. (1984). A service quality model and its marketing implications. *European Journal of marketing, 18*(4), 36-44.
15. Hair, J. F. (2003). *Essentials of Business Research Methods*: Wiley.
16. Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E. & Tatham, R. L. . (2010). Multivariate Data Analysis *7*.
17. Hair Jr, J. F., Hult, G. T. M., Ringle, C., & Sarstedt, M. (2016). *A primer on partial least squares structural equation modeling (PLS-SEM)*: Sage Publications.
18. Henseler, J., Ringle, C. M., & Sinkovics, R. R. (2009). The use of partial least squares path modeling in international marketing. *Advances in international marketing, 20*(1), 277-319.
19. Hyllegard, K. H., Paff Ogle, J., Yan, R.-N., & Attmann, J. (2010). Exploring Gen Y Responses to an Apparel Brand's Use of Cause-Related Marketing Does Message Matter When It Comes to Support for the Breast Cancer Cause? *Clothing and Textiles Research Journal, 28*(1), 19-34.
20. Kashif, M., Abdur Rehman, M., & Pileliene, L. (2016). Customer perceived service quality and loyalty in Islamic banks: A collectivist cultural perspective. *The TQM Journal, 28*(1), 62-78.
21. Kitapci, O., Taylan Dortyol, I., Yaman, Z., & Gulmez, M. (2013). The paths from service quality dimensions to customer loyalty: An application on supermarket customers. *Management Research Review, 36*(3), 239-255.
22. Kyoon Yoo, D., & Ah Park, J. (2007). Perceived service quality: Analyzing relationships among employees, customers, and financial performance. *International Journal of Quality & reliability management, 24*(9), 908-926.

23. Ladhari, R., Ladhari, I., & Morales, M. (2011). Bank service quality: comparing Canadian and Tunisian customer perceptions. *International Journal of Bank Marketing, 29*(3), 224-246.
24. Lee, J.-H., Kim, H.-D., Ko, Y. J., & Sagas, M. (2011). The influence of service quality on satisfaction and intention: A gender segmentation strategy. *Sport Management Review, 14*(1), 54-63.
25. Marković, S., Jelena, D., & Katušić, G. (2015). *Service Quality Measurement in Croatian Banking Sector: Application of SERVQUAL Model.* Paper presented at the MIC 2015: Managing Sustainable Growth.
26. Oliver, R. L. (1997). *Loyalty and profit: Long-term effects of satisfaction*.
27. Oly Ndubisi, N. (2007). Relationship marketing and customer loyalty. *Marketing Intelligence & Planning, 25*(1), 98-106.
28. Pantouvakis, A. (2013). The moderating role of nationality on the satisfaction loyalty link: evidence from the tourism industry. *Total Quality Management & Business Excellence, 24*(9-10), 1174-1187.
29. Parasuraman, Zeithaml, V. A., & Berry, L. L. (1985). A conceptual model of service quality and its implications for future research. *the Journal of Marketing*, 41-50.
30. Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1988). Servqual: A multiple-item scale for measuring consumer perc. *Journal of retailing, 64*(1), 12.
31. Parkinson, J., Russell-Bennett, R., & Previte, J. (2012). Mum or bub? Which influences breastfeeding loyalty. *Australasian Marketing Journal (AMJ), 20*(1), 16-23.
32. Raajpoot, N. (2004). Reconceptualizing service encounter quality in a non-western context. *Journal of Service Research, 7*(2), 181-201.
33. Rahi, S. (2015). Moderating Role of Brand Image With Relation to Internet Banking and Customer Loyalty: A Case of Branchless Banking. *The Journal of Internet Banking and Commerce, 2015*.
34. Rahi, S. (2016). Impact of Customer Perceived Value and Customer's Perception of Public Relation on Customer Loyalty with Moderating Role of Brand Image. *Journal of Internet Banking and Commerce, 21*(2).
35. Rahi, S. (2016). Impact of Customer Value, Public Relations Perception and Brand Image on Customer Loyalty in Services Sector of Pakistan. *Arabian J Bus Manag Review S, 2*, 2.
36. Rahi, S. (2017). Research Design and Methods: A Systematic Review of Research Paradigms, Sampling Issues and Instruments Development. *International Journal of Economics & Management Sciences, 6*(2).
37. Rahi, S., & Ghani, M. (2016). Internet Banking, Customer Perceived Value and Loyalty: The Role of Switching Costs. *J Account Mark, 5*(188), 2.
38. RAHI, S., & GHANI, M. A. (2016). CUSTOMER'S PERCEPTION OF PUBLIC RELATION IN E-COMMERCE AND ITS IMPACT ON E-LOYALTY WITH BRAND IMAGE AND SWITCHING COST. *Journal of Internet Banking and Commerce, 21*(3).
39. RAHI, S., YASIN, N. M., & ALNASER, F. M. (2017). Measuring the role of website design, assurance, customer service and brand image towards customer loyalty and intention to adopt interent banking. *The Journal of Internet Banking and Commerce, 22*(S8).

40. Rahi Samar, Mazuri Abd Ghani, & ALNASER, F. M.-I.-. (2017). THE INFLUENCE OF E-CUSTOMER SERVICES AND PERCEIVED VALUE ON BRAND LOYALTY OF BANKS AND INTERNET BANKING ADOPTION: A STRUCTURAL EQUATION MODEL (SEM). *Journal of Internet Banking and Commerce, 22*(1).
41. Ringle, C. M., Wende, S., & Becker, J.-M. (2015). SmartPLS 3. Boenningstedt: SmartPLS GmbH.

42. Roca, J. C., Chiu, C.-M., & Martínez, F. J. (2006). Understanding e-learning continuance intention: An extension of the Technology Acceptance Model. *International journal of human-computer studies, 64*(8), 683-696.
43. Ryan, M. J., & Bonfield, E. H. (1975). The Fishbein extended model and consumer behavior. *Journal of consumer research, 2*(2), 118-136.
44. Sayani, H. (2015). Customer satisfaction and loyalty in the United Arab Emirates banking industry. *International Journal of Bank Marketing, 33*(3), 351-375.
45. Teas, R. K. (1994). Expectations as a comparison standard in measuring service quality: an assessment of a reassessment. *the Journal of Marketing*, 132-139.
46. Thompson, R., Berger, T., Berry, S., Clark, G., Kettner, R., Lavond, D., . . . Weisz, D. (1982). Neuronal substrates of learning and memory: hippocampus and other structures *Conditioning* (pp. 115-129): Springer.
47. Ueltschy, L. C., Laroche, M., Zhang, M., Cho, H., & Yingwei, R. (2009). Is there really an Asian connection? Professional service quality perceptions and customer satisfaction. *Journal of business research, 62*(10), 972-979.
48. Venkatesh, V., & Davis, F. D. (2000). A theoretical extension of the technology acceptance model: Four longitudinal field studies. *Management science, 46*(2), 186-204.
49. Yalley, A. A., & Agyapong, G. K. (2017). Measuring service quality in Ghana: a crossvergence cultural perspective. *Journal of Financial Services Marketing*, 1-11.
50. Zeithaml, V. A., Berry, L. L., & Parasuraman, A. (1996). The behavioral consequences of service quality. *the Journal of Marketing*, 31-46.

EVALUATING THE BUSINESS DEVELOPMENT GOAL OF ALBANIAN SMES

Filip Ruxho
European University of Tirana, Albania
routzio@gmail.com

ABSTRACT

Nowadays, small and medium-sized enterprises (SMEs) are increasingly being recognized as a vital part of a country's economy. Albania is a country in transition and after the communist era, has been on a difficult path to overcome many social, political and economic difficulties. The country is pursuing aggressively its agenda for European integration. Albania, same as the rest of Europe, has understood the importance of entrepreneurship in the further development of the national economy. However, Albania, in contrast to other countries in the Western Balkans region, has done little to develop the entrepreneurial stance. The main aim of this study was to investigate if Albanian companies plan in advance their business actions and at what level; also, to analyze their business development goal and the whether they are informed about the financing methods of the specific areas they would prefer to develop. The instrument used was a questionnaire of 50 items and the participants where Albanian organizations (N = 163) from different sectors of the economy. Data were analyzed using IBM SPSS Statistics 20. Findings show that the three main areas in which Albanian companies intend to develop their business are: (i) Increase annual turnover by opening new markets; (ii) Develop and market new products/ services; (iii) To develop staffing skills. Anyway, the interest to invest and to develop seems to vary widely based on the sector. One of the limitations of this study includes the fact that questionnaire is self-evaluative and the veracity of their responses is questionable.
Keywords: *Business Development, Albanian SMEs, Funding methods, European Union*

1. INTRODUCTION

In his search, Tambunan (2008) noted that Small and Medium Enterprises seem to play a vital role in economic development as they have been the main source of growth in employment and economic growth in both developing and developed countries. In developing countries, the roles of SMEs become more important as they have the potential to improve income distribution, job creation, poverty reduction and export growth (Keskġn et al. 2010). They also lead to enterprise, industry and rural economy development. According to Kachembere (2011), small and medium-sized enterprises play an important role in promoting economic growth in the country and sustainable development. The high rate of economic growth contributes to economic and social development as well as to the reduction of poverty (Tambunan 2008). However, this depends greatly on the quality of growth. The quality of growth includes the composition of its growth, spread, and distribution, and most importantly the degree of sustainability. Regardless their imperfectness, market mechanisms, have shown over time that they are the most efficient and reliable distributor of economic resources. These mechanisms, already adopted in Albania, provide customers with a wide range of choices (Spaho 2012). The economic globalization and the aim involve in the European market are leading to a more open market and in the same time helping to reduce barriers (Asllani, Becherer, and Theodhori 2014; Lamaj 2015; Spaho 2012). The free trade agreements that are signed are just the beginning of the integration process. In this context, imports and exports between countries are becoming less controlled by the government and are preparing the ground for a higher level of free competition between the producers of goods and services. The Stabilization and Association process includes several activities and relations between the country in question and the European Union, as well as a gradual adoption of EU legislation by the signatory country.

This process involves the establishment of a series of bilateral agreements between the signatory country and the EU, with customs tariffs for industry and agriculture, intellectual property rights, and standardization and certification procedures. Much progress has been made by this country and this is seen in the increase of National Revenues, as Albania is now a middle-income country and has also managed to meet the NATO and VISA membership criteria (Laci and Hysa 2015). Right now, the biggest challenge for Albania is to meet the requirements of being a potential candidate for EU membership. Fulfilling these requirements will be the biggest historic event for Albania. Thus, being a member of the EU also means entering the common European market. Albania is now facing a new challenge for increasing competition in the international market and the goal of joining the European Union (Spaho 2012). Precisely in this analysis lies the main purpose of this study, which reflects an in-depth analysis of the current situation of Albanian businesses and then draw valuable conclusions about Albania's ability to compete in the European market in a future not remote. The main column on which this study is based is precisely the question: "Do Albanian companies plan their business actions at what level?" In addition, another main point is to analyze their business development goal and whether they are informed about the existing financing methods. In simplified terms, business development can be summed up as ideas, initiatives and activities aimed at improving business (Butler 2001). This includes revenue growth, growth in terms of business expansion, and increased profitability by building strategic partnerships and making strategic business decisions. Business development activities extend across different departments, including sales, marketing, project management, product management, and vendor management (Butler and Butler 2001). Also included are networking, negotiations, partnerships, and cost-saving efforts. These departments and different activities are driven by and consistent with the business development goals.

2. LITERATURE REVIEW

Small and medium-sized enterprises (SMEs) are a focal point in shaping enterprise policy in the European Union (Eurostat 2015). In the past five years, they have created around 85% of new jobs and provided two-thirds of the total private sector employment in the EU (European Commission, 2015). They are increasingly being recognized as a vital part of a country's economy, whether it is a country with a genuine economy or a developing economy country (Keskġn et al. 2010). They are very important as a source of employment for Albania, creating entrepreneurial spirit and innovation and are crucial to promoting competition (Cepani, 2006). According to the Federation of European Accountants, according to January 2013, SMEs stand for 99.8% of all European companies. Whereas, according to the latest EU reports, it turns out that more than 99% of companies in Europe are SMEs, employing almost 70% of the European workforce and producing roughly 60% of the total turnover from production and services. An important aspect of the development of the Albanian economy is the size of companies running in the specified market. As shown by past and current studies, the main percentage of companies operating in the Albanian market are small and medium enterprises, with only a number of companies, which can be categorized as large companies (Berhani and Hysa 2013; Xhafka and Avrami 2015). However, it is important to note that the group of large companies consists of well-known foreign companies, which only in recent years have entered the domestic market. The private sector plays an important role in the Albanian economy. The private sector is a very important part of the economy, as they represent around 99 % of all enterprises and employ an increasing number of persons. Referring to the structure of enterprises, SMEs represent over 99.6% of active enterprises in Albania. SME sector gave 72.9 percent of the GDP and employed 71.4 percent of all active work forces (Spahiu and Kapaj 2016). In addition to the government's efforts to improve the business climate, the performance of SMEs is still weak to cope with the global growth of competition.

The free trade agreements in the region today, as well as the implementation of the Stabilization and Association Agreement with the EU (European Union), makes it imperative for the government to take concrete measures focusing on the most critical factors and areas of the SME sectors, such as:
1. Entrepreneurship and business innovation
2. Implementation of European Union (EU) standards

To achieve this, the competitiveness of Albanian SMEs will need to be enhanced through the promotion of innovative SMEs as well as technology transfer. Referring to the EU SME Charter, business innovation in the Albanian market is far from other countries in the region. To improve this situation, there is a need for better policy instruments that will enable businesses in Albania to be closer to the pace of development of Entrepreneurship, Innovation and Technology in the EU, better cooperation between the Direct Investment (IHD) and NVEs, investing more in human resource development. If Albania would be part of EU, SMEs would benefit also from some other benefits from the EU politics, like "Think Small First" which is a principle that promotes entrepreneurial spirit among European citizens. In addition, the commission promotes entrepreneurship through the Entrepreneurship Action Plan (European Commission, 2015), supports entrepreneurship education and provides support tools for aspiring entrepreneurs. Apparently SME financing in Europe is not homogenous, actually findings (Moritz, Block, and Heinz 2016) show that different financing patterns exist. Other benefits that Albanian SMEs might be exposed to are: (i) the improvement of the access to new markets and internationalization; (ii) facilitation access to finances- as the Commission works on improving the financing environment for SMEs and gives information on funding; (iii) support on SME competitiveness and innovation; (iv) access on key support networks and information for SME; (v) support to start-ups and scale-ups in particular.

3. RESEARCH QUESTIONS
The purpose of this study was to analyze and investigate the SMEs in Albania and the level of business planning in terms of future development and growth. This study is mainly of investigative and explorative nature, aiming to discover the fields of activity that Albanian SMEs would like to develop in the next 2-3 years and to investigate whether they are informed about the funding methods in their disposal. In line with this, their relationship with banks and the activities they would invest in if they find financial capital where analyzed and highlighted for each industry sector. In order to achieve the aim of this study the following research questions were composed:
- RQ_1: Which are the fields of activity that Albanian SMEs plan to develop in the next 2-3 years?
- RQ_2: Are Albanian SMEs informed about the funding methods in their disposal?

4. METHOD
4.1. Participants
Albanian companies from different sectors of the economy where the target group selected for this study; the sectors were selected based on the current percentage of their contribution to the economy. For the sample selection was followed a non-probabilistic approach but was used an intentional selection, which is the most common technique of sample selection (Marshall, 1996). This might include the development of a variable model that can influence the individuals' contribution and may be based on the researchers' practical knowledge, available literature, and the study itself. The sample size (N=163) was 163 different SMEs distributed in different sectors (Construction industry 7%, Trade 32%, Hospitality & Tourism 34%, Manufacturing industry 6%, Information and Technology 4% and Services & others 17%).

4.2. Procedure of data collection

The data collected to conduct this study were divided into secondary and primary data. Secondary data are mainly collected from articles in scientific journals or official pages and books, which relate to the literature review, while, primary data are collected from questionnaires filled by the selected sample. The questionnaire was designed based on the suggestions of the relevant literature and later was distributed to Albanian businesses operating mainly in Tirana but also in other important cities such as Berat, Durres, Lezha, Fier, Elbasan, etc. In order for sample to be representative, it was decided that the participation of businesses should be fairly proportional to the distribution of sectors according to contribution to the Albanian Economy, which is: 43.4% Trade, Hotels and Restaurants 16.2%, Transport and Communication 9.9%, Manufacturing 9.6%, Construction 4.3%, Agriculture and Fishing 1.7%, while other services account for 14.9% (according to INSTAT). The questionnaire used for this study included seven questions aimed at evaluating the business development goals of Albanian SMEs. Anyway, since some questions were with alternatives they were considered as different variables, so the total of the considered variables was 15. Another section of this questionnaire was aimed at evaluating the financial aspect of the respondents. The questionnaire was distributed by sectors in accordance with their contribution to the economy; the source for this information was INSTAT.

4.3. Instruments

The variables of this study were measured using the questionnaire compiled by the author, based on studies and suggestions from different researchers, with the tendency for the questions to be as convenient as possible for the specific situation. This questionnaire aimed to measure level of the information that Albanian SMEs have about the possibility of receiving grants and European business development funds; also if they have ever been granted with any type of European funds for their business development. Their business development goal was also measured with variables such as: (i) Increasing annual turnover by opening up new markets; (ii) Developing staffing skills; (iii) Developing managerial skills of managers; (iv) Employing more staff; (v); Minimizing costs by increasing staff productivity; (vi) Developing and market new products/ services. The respondents were asked to highlight which activities would they invest for if they find financial funding for next year. A list of possible choices was offered to them. In addition, there were also several demographic questions and general characteristics of the company, which served as control variables: the industry sector, the company's legal status and the presence of the company on the market were some of these controlling variables.

5. DATA ANALYSIS AND RESULTS

Interestingly, only 6.78% of Albanian businesses claim to have been informed by various government institutions (municipalities, prefectures, European institutions, etc.) about the possibility of receiving grants and European funds for business development, it is to be recognized that this is a measure very small compared to the total of respondents in the study (N = 161). To add, 66.9% of businesses are aware of the existence of European grants for business development, while the number of those who have this information is considerable (33.1%). Only 2.5% of these businesses have granted at least one European grant for business development, should be acknowledged that this is a low percentage compared to the opportunities that exist in this regard. Interestingly, not everyone would want to have regular official information from institutions for European business development grants, about 23.8% of respondents are not interested in having this information from this source. The most important part of this aspect was getting information about the activities that Albanian

companies plan to develop in the next 2-3 years. The table below mirrors the level of the percentage of companies that by field of activity plan to realize those investments or not.

Table 1. The preferred fields of activity

The preferred fields of activity	Yes	No
Increasing annual turnover by opening up new markets	36.6%	63.4%
Developing staffing skills	31.7%	68.3%
Developing managerial skills of managers	10.6%	89.4%
Employing more staff	18.6%	81.4%
Minimizing costs by increasing staff productivity	29.2%	70.8%
Developing and market new products / services	39.8%	60.2%
None of these	6.8%	93.2%

Findings show that the three main areas in which Albanian companies intend to develop their business are:
1. Increase annual turnover by opening new markets
2. Develop and market new products / services
3. To develop staffing skills

Meanwhile, there seems to be no high interest in the field of managing managerial skills or employing more staff. It is true that these businesses responded that they plan to invest and develop these areas of activity, but this study also explores the fact that each company has a business plan written and updated it. According to their responses, 81.3% have a business plan and update, 6.5% have a business plan but do not update, 7.7% of them claim to have no business and 4.5% say they have no information about this item.

5.1. The financial aspect of the Albanian organizations

Funding is a business function that uses figures and analytic tools to help managers make better decisions. There are many reasons why you should understand and evaluate the financial aspects of a business. For owners and managers, understanding the financial aspects is essential for making good decisions that go ahead. Potential investors can also take care of a company's financial aspects as a means of gaining knowledge to help predict future performance. In this study, information about the company's annual turnover in the last year, regarding the increase or decrease of this turnover compared to the previous year, was also asked for financial capital. An important element of this section was the investigation about the activities they would invest if they would find financial capital for next year. The table below reflects the classification of the total number of participating companies (N = 160, missing value = 3) depending on the annual turnover (Euro) where three main intervals are used, based on the European Commission's suggestion for the Small Business Classification criteria secondary school.

Table 2. Information on annual turnover of the participants

Annual Turnover (Euro)	Frequency (N)	Percentage
Below 2 million	101	63.1%
2-10 million	44	27.5%
10-50 million	15	9.4%

Meanwhile, 59.7% of these businesses (N = 95) had an increase in annual turnover compared to the earlier year and 15.1% declined compared to the previous year. However, 25.2% of respondents had the same level of turnover compared to the earlier year. In total, 12.9% of the respondents claim to have 10% increase, meanwhile 5.5% of the respondents had a 5% increase,

and only a very small part (1.2%) had an increase of up to 40%. On the other hand, 3.7% of respondents had a drop of 2% and 2.5% of Albanian companies had a decrease of 3%.
Regarding how companies perceive their relationship with banks, the answers are as per the table below.

Table 3. Information about the participants relationship with banks

Relationship with banks	Frequency (N)	Percentage
Very good	30	19.9%
Good	46	30.5%
Neither good nor bad	47	31.1%
Weak	2	1.3%
Very weak	1	0.7%
Does not apply	25	16.6%

Other data show that only 21.3% of businesses (N = 160) have requested financial capital to run their business over the last year, while only 14.5% of these businesses (N = 159) now have a bank loan or yes plans to take over next year. The table below shows the information about the activities that companies would invest if they find financial capital, data on the industry sector, and an analysis of activities with the highest percentage.

Table 4. Information about the activities that companies would invest in

Industries	CS*	PL/ B	I/ RO	PME	R & D	TDP	BOB	M
Construction industry	16.7%	33.3%	25%	50%	0%	8.3%	0%	0%
Trade	18.8%	6.3%	12.5%	29.2%	6.3%	8.3%	18.8%	10.4%
Hospitality & Tourism	10.7%	17.9%	69.6%	0%	0%	3.6%	21.4%	3.6%
Services	15.4%	7.7%	23.1%	46.2%	15.4%	0%	23.1%	15.4%
Manufacturing	0%	20%	20%	70%	0%	30%	0%	20%
Information and Technology	14.3%	0%	0%	0%	42.9%	71.4%	0%	14.3%
Others	13.3%	20%	26.7%	20%	6.7%	13.3%	20%	26.7%

* Note: Fields of activity are coded in the following way: CS-Cash flow; PL/ B- Purchase of land or buildings; I/ RO- Improvement or reconstruction of the object; PME- Purchase of machinery and equipment; R & D- Research & Development; TDP - Training and development of personnel; BOB- To buy another business; M- Marketing.

Some of the most important results show that as regards the construction industry, the area of activity to which 50% of them would like to invest is in the purchase of machinery and equipment, followed by the purchase of land and buildings (33.3%) and third in improvement or reconstruction facility (25%). In the trade sector, it is also important to purchase machinery and equipment (29.2%), followed by buying another business and cash flow at 18.8% of respondents. The Hotel and Tourism Sector is interesting as to how 69.6% respond to the improvement or reconstruction activity of the facility, followed by the intention to buy another business (21.4%) and thirdly to purchase land or buildings (17.9%). The three areas where the services sector would want to invest are purchase of machinery and equipment (46.2%), improvement or reconstruction of the facility (23.1%) and purchase of another business (23.1%). Purchase of machinery and equipment is also the preferred sector of the production and processing sector (70%) followed by potential investment in training and personnel

development (30%). Information and Technology prefer 71.4% to invest in personnel training and development, followed by Research & Development (42.9%).

6. CONCLUSION

One of the conclusions drawn from the findings in this research is that in terms of business development, preference is high in the field of development and marketing of new products/ services and in the growth of annual turnover by opening new markets. This means that there is a general willingness to expand both in the product and in the market. So, if they had financial capital or foreign funds these companies would invest in expanding, which gives an answer to the aspect of readiness and willingness of small and medium-sized Albanian businesses to export to Europe as well. Nevertheless, are they ready from other aspects? Obviously, desire and willingness are not enough to make it into a foreign market and not just. The financial aspect of the participating companies is largely at a turnover below € 2 million (63.1%) and 59.7% of businesses have increased compared to the earlier year. So, it can be said that participating companies meet the criterion of being small and medium-sized businesses according to European standards and have been growing in circulation, which can be seen as a success indicator. Regarding the relationship with banks, it seems that a considerable majority prefers to say that there is a neutral relationship, leaving no room for interpretation; however, 30.5% claim to have good relations. The interest to invest and to develop seems to vary widely based on the sector. The construction industry prefers to invest in the purchase of machinery and equipment while Hostelry and Tourism sector prefer to invest in the improvement or reconstruction of the facility. The purchase of equipment and machinery also prefers to invest in the Trade, Service and Production and Processing sectors. Only the Information and Technology sector seems to have a high interest in investing in personnel training and development alongside search for development. It seems that in general the most neglected areas are marketing, training and personnel development, cash flow and other business buying. In a future study, the reasons why they prefer these activities would be analyzed and if they think, they have invested enough in some other activities.

LITERATURE:

1. Asllani, Arben, Richard Becherer, and Qirjako Theodhori. 2014. "Developing a Sustainable Economy Through Entrepreneurship: The Case of Albania." *South-Eastern Europe Journal of Economics* 2(5): 243–62.
2. Berhani, Riada, and Eglantina Hysa. 2013. "THE ECONOMY OF ALBANIA TODAY AND THEN: THE DRIVERS TO GROWTH." In *The 4th International Conference on European Studies*, , 598–611.
3. Butler, David. 2001. *Business Development : A Guide to Small Business Strategy*. Butterworth-Heinemann.
4. Butler, David, and David Butler. 2001. "Chapter 6 – Expanding the Market." In *Business Development*, , 87–103.
5. Eurostat. 2015. "Statistics on Small and Medium-Sized Enterprises." *Statistics Explained*.
6. Keskġn, Hidayet, Canan Ġentürk, Onur Sungur, and Hakan M Kġrġġ. 2010. "The Importance of SMEs in Developing Economies." *International Symposium on Sustainable Development*.
7. Laci, Besjana, and Eglantina Hysa. 2015. "Albania ' S Challenge to Access in European Common Market." *Economic Insights – Trends and Challenges* IV(II): 11–19.
8. Lamaj, Jonida. 2015. "THE IMPACT OF INTERNATIONAL TRADE AND COMPETITION MARKET ON DEVELOPING COUNTRIES." *Management, Knowledge and Learning*: 1533–40.
9. Moritz, Alexandra, Joern H. Block, and Andreas Heinz. 2016. "Financing Patterns of

European SMEs – an Empirical Taxonomy." *Venture Capital* 18(2): 115–48.

10. Spahiu, Arjona, and Ana Kapaj. 2016. "Small and Medium Enterprises Environment—Case of Albania." *Chinese Business Review* 15(6): 305–10.

11. Spaho, Edi. 2012. "Albania's Challenge for Access and Competitiveness in EU Market: When Good Will Requires More than Legal Regulation. An inside of Albania's Efforts to Increase the Presence of Its Domestic Product in EU Markets." *ACADEMICUS*: 113–25.

12. Tambunan, Tulus. 2008. "Development of SME in ASEAN with Reference to Indonesia and Thailand." *Chulalongkorn Journal of Economics* 20(201): 53–83.

13. Xhafka, Eralda, and Elidon Avrami. 2015. "The SME in a Globalized Economy. Challenges of the Albania's SME in the Optic of Small Business Act." *ES European Journal of Economics and Business Studies Articles* 1(1): 2411–9571.

THE IMPACT OF PERCEIVED BEHAVIOURAL CONTROL ON THE STUDENTS' BEHAVIOUR AND THEIR INTENTION TO ENGAGE IN UNETHICAL BEHAVIOUR IN HIGHER EDUCATION

Helena Stimac
Faculty of Economics Osijek, Croatia
helena.stimac@efos.hr

ABSTRACT
Lately, the problem of higher incidence of unethical behaviour of students in higher education is increasing, as well as the problem of poor control of said behaviour by the institutions of higher education, which in turn increases the likelihood of unethical behaviour. This raises the question of actual unethical behaviour by students and their intention for future behaviour, and to what extent and in what way does perceived behavioural control has an effect. Modern technology facilitates and increases the likelihood of unethical behaviour by students and facilitates the performance of unethical behaviour itself. Therefore, this paper emphasizes the perceived behavioural control of students in higher education. The research was conducted on a sample of 622 university students. The goal of the paper is to determine to what extent does perceived behavioural control affect the actual student behaviour and their intention to behave unethically in higher education, by applying the Theory of Planned Behaviour. Descriptive analysis, correlation analysis, regression analysis, and the analysis of variance (ANOVA) were used in the paper. The results of the correlation analysis have shown that there is a statistically significant correlation between the perceived behavioural control and the intention to behave unethically, as well as the current (actual) student behaviour. The results of the regression analysis have shown a statistically significant positive relation between the perceived behavioural control of the students and the actual, currently unethical behaviour and their intention to engage in unethical behaviour. The results, as well as the guidelines for future actions, have been stated in the paper.
Keywords: Behaviour, Intention, Perceived behaviour control, Students, Unethical behaviour

1. INTRODUCTION
Today, technology has great significance for the everyday life of individuals. In higher education, the use of technology facilitates learning, acquiring necessary information, networking with fellow students to improve teamwork, and networking with the faculty (web site, e-mail, forums, groups…). It can be said that technology has mostly brought positive developments. However, if we look at the other side, we can conclude that the same technology is reducing personal connections, face-to-face communication is disappearing, and the students are "downloading" more and more information from various web sites, which reduces critical thinking and reaching conclusions, because they rely on someone else's opinions. Also, fewer and fewer students are reading books, instead opting to rely on unverified articles from the internet. Furthermore, technology facilitates the use of impermissible materials during final exams and midterm exams, and downloading without citing when writing midterm and final papers, which increases unethical behaviour. The goal of the paper is to show the perceived student behaviour control in higher education. Perceived behavioural control, which is defined as the perceived difficulty or ease of performing the behaviour itself, is observed as an important factor when applying the Theory of Planned Behaviour. Due to this, the Theory of Planned Behaviour will be used to show the influence of perceived behavioural control on the future intention of unethical behaviour by students, as well as the actual, current unethical behaviour of students in higher education. Based on everything stated above, two hypotheses are presented in the paper:

H1: Students' perceived behavioural control positively influences their real behaviour when engaging in unethical behaviour

H2: Students' perceived behavioural control positively influences their intention to engage in unethical behaviour

2. THEORETICAL FRAMEWORK OF THE THEORY OF PLANNED BEHAVIOUR

In the area of human behaviour research, the Theory of Planned Behaviour is probably one of the most commonly applied. During the last two decades, it has been applied more and more, and expanded to research related to personal behaviour, especially when predicting the behavioural intentions of individuals and their actual behaviour (Lin, Chen, 2010, p. 66). The Theory of Planned Behaviour is actually the expanded Theory of Reasoned Action, including the measurements of belief control and perceived behavioural control (Armitage, Conner, 2001, p. 471), and it claims that people believe that the intention to act came before the action. However, there are questions related to its generalisation and the effect of certain predictors in the equation, and the model does not explain that the best predictor of future behaviour is past behaviour (Aiken, 2002). The new model compensates for the deficiencies of the Theory of Reasoned Action, which were noticed by its authors (Ajzen, Fishbein, 2004) during the research into the impossibility of the Theory of Reasoned Action to include the behaviours which are not fully controlled by individuals (Marangunić, Granić, 2012, p. 208). The model also does not include the perceived behavioural control predictor, which definitely leads to the expanded model of the Theory of Planned Behaviour. The Theory of Planned Behaviour has added the perceived behavioural control as the determinant of behavioural intention, as well as the control beliefs which affect the perceived behavioural control (Kit Chang, 1998, p. 1826), and in order to improve the predictions in situations where behaviour can be limited or violate the rules, like the academic integrity policy. Perceived behavioural control refers to the individuals' perceptions of their ability to perform particular behaviour (Ajzen, 2002). In other words, an individual's confidence in performing a specific task significantly influences behaviour (Ajzen, 1991). The usefulness of perceived behavioural control in predicting (un)ethical behaviour has been substantiated by research results and is consistent with most situations involving decisions of performing unethical behaviour. As mentioned before, the performers of unethical behaviour do not have total control in most situations. Opportunities and resources must exist before they can be performed (Kit Chang, 1998, p. 1832). Ajzen (1988) and Beck and Ajzen (1991) have expanded the Theory of Planned Behaviour to enable the prediction of behaviour of individuals. The Theory of Planned Behaviour is used today in various research areas to show the effect of attitudes, subjective norms, and perceived behavioural control on the intentions of individuals resulting in certain behaviour. The information stated above can be seen on Figure 1.
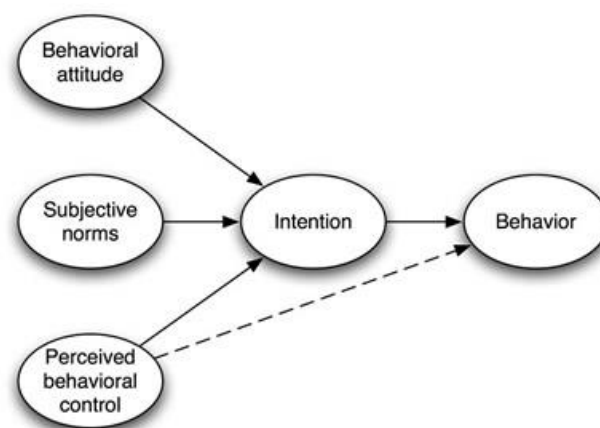
Figure 1: Theory of Planned Behaviour model (Ajzen, 1991, pp. 179-211)

The attitude toward a behaviour is defined as "a person's general feeling of favourableness or unfavourableness for that behaviour" (Ajzen, Fishbein, 1980). The attitude toward behaviour is a function of the product of one's salient belief (B) that performing the behaviour will lead to certain outcomes, and an evaluation of the outcomes (E), i.e., a rating of the desirability of the outcome. The attitude is thus defined as (Kit Chang, 1998, p. 1826):

$$A = \sum B_i\, E_i$$

The Subjective Norm is defined as a person's "perception that most people who are important to them think they should or should not perform the behaviour in question" (Ajzen, Fishbein, 1980). The Subjective Norm is a function of the product of one's normative belief (NB) which is the "person's belief that the salient referent thinks they should (or should not) perform the behaviour" (Ajzen, Fishbein, 1980), and his/her motivation to comply (MC) to that referent. Thus the Subjective Norm can be defined as (Kit Chang, 1998, p. 1826):

$$SN = \sum NB_i\, MC_i$$

Ajzen (1991) defined perceived quality control as the perceived ease of behaviour on the basis of past experiences and predicted obstacles. Perceived behavioural control is a function of Control Beliefs (CB) and Perceived Facilitation (PF). The Control Belief is the perception of the presence or absence of requisite resources and opportunities needed to carry out the behaviour. The Perceived Facilitation is one's assessment of the importance of those resources for the achievement of outcomes (Ajzen, Madden, 1986). Perceived behavioural control can be defined as (Kit Chang, 1998, p. 1827):

$$PBC = \sum CB_i\, PF_i$$

Smith (2015, pp. 21-22) said in his dissertation that much of the research done with the intention as reported in the meta-analyses has concluded that the prediction of intention can be achieved through three determinants – attitudes toward the behaviour, subjective norm, and perceived behavioural control (McEachan et al., 2011). Behavioural intention has been identified in the theory as the most significant predictor of behaviour (Ajzen, 1991; Ajzen, Madden, 1986). Ajzen and Fishbein (2005) contend that the intention to perform a behaviour is the main precursor of actually performing the behaviour. In other words, one must engage in a thought processes that may be influenced by various factors leading to the formation of intention. While intention does not necessarily guarantee performance of a behaviour, research has established this construct as a reliable predictor, as reported in meta-analyses (McEachan et al., 2011). In the intention-behaviour relationship, in theory, perceived behavioural control takes into consideration those internal and external features that may impact the behaviour (Ajzen, 1991). Relating to the internal factors of perceived behavioural control and behaviour, Ajzen (1991) notes that if an individual perceives that a behaviour poses too much difficulty to perform, there is an increased likelihood that his or her perceived behavioural control will be poor (Smith, 2015, p. 23).

3. PERCEIVED BEHAVIOURAL CONTROL AND THE INTENTION TOWARD UNETHICAL BEHAVIOUR IN HIGHER EDUCATION

The Theory of Planned Behaviour is a theory that contains a large number of predictors (personal attitudes, subjective norms, perceived behavioural control and intentions). This paper emphasizes perceived behavioural control as one of the predictors introduced after the appearance of the Theory of Planned Behaviour.

Perceived behavioural control related to the ease or difficulty of certain behaviour also has a significant effect, and the assumption is that it reflects through past experiences, along with the expected obstacles (Lin, Chen, 2010, p. 67). McCabe et al. (2002) stated in their paper that if a behaviour is perceived as challenging, or there are obstacles to its efficiency, perceived behavioural control becomes an important predictor for predicting behaviour. This predictor is one of the main differences between the Theory of Planned Behaviour and the Theory of Reasoned Action (Beck, Ajzen, 1991). As we have already noted, within the Theory of Planned Behaviour, perceived behavioural control is held to affect both intentions and behaviour. The perceived behavioural control determinant considers two main areas, namely, perceptions of having adequate control and the management of resources that facilitate a successful performance of the behaviour, as well as the perceived level of ease or difficulty associated with doing the behaviour (Smith, 2015, pp. 22-23). Intentions of behaviour are defined as indicators of how much individuals are willing to try, and how much effort they plan to invest to perform certain behaviour (Ajzen, 1991). This dependant variable in the Theory of Planned Behaviour model is considered to be a main factor because it registers motivation in the behaviour (Beck, Ajzen, 1991). Furthermore, the same authors state that intention to engage in unethical behaviour is highly correlated to actual unethical behaviour, which corresponds to other research (Stone et al., 2007). Ajzen (1991) extended the Theory of Planned Behaviour to include a measure of perceived behavioural control—a variable that had received a great deal of attention in social cognition models. Perceived behavioural control is held to influence both intention and behaviour. Ajzen (1991) argues that the magnitude of the perceived behavioural control–intention relationship is dependent upon the type of behaviour and the nature of the situation (Armitage, Conner, 2001, p. 472).

4. RESEARCH METHODOLOGY
The goal of the research was to identify and evaluate the perceived behavioural control by the students, and to investigate if perceived behavioural control affects the current students' behaviour, as well as their intentions to behave unethically in higher education. The paper emphasizes the perceived behavioural control of the students, and for that reason only the mentioned predictor will be examined. The research was conducted on a sample of 622 university students (undergraduate and graduate study programmes). The research included all the years of study, as well as all the courses at the examined faculty. The sample of 622 students is a representative sample, and it represents 29% of the currently active students at the examined faculty in total. The description of the sample regarding the observed socio-demographic information of the study participants is shown in Table 1.

Table following on the next page

Table 1: Sample description (Authors' work)

		N	%
Gender	M	225	36.2
	F	389	62.5
Year of study	1st	123	19.8
	2nd	92	14.8
	3rd	161	25.9
	4th	118	19.0
	5th	127	20.4
Place of residence	Village	195	31.4
	Suburb	64	10.3
	Town/city	357	57.4
Student status	Non-paying	516	83.00
	Fully paying	100	16.1
Course	Financial Management	143	23.0
	Marketing	102	16.4
	Management	104	16.7
	Entrepreneurial Management and Entrepreneurship	84	13.5
	Business Informatics	64	10.3
Class attendance	0%	1	0.2
	0-25%	11	1.8
	26-50%	36	5.8
	51-75%	151	24.3
	76-100%	419	67.4
Study success (average grade)	2.0-3.0	123	19.8
	3.1-4.0	323	51.9
	Over 4.1	132	21.2
Mother's level of education	Elementary school	63	10.1
	Secondary school	390	62.7
	Higher education	113	18.2
	Master programs	39	6.3
	Doctoral programs	9	1.4
Father's level of education	Elementary school	27	4.3
	Secondary school	411	66.1
	Higher education	125	20.1
	Master programs	37	5.9
	Doctoral programs	12	1.9

The information was gathered with an offline examination method, using a questionnaire in which topic and the goal of the research was explained to the participants. In the process of measuring the predictors, the authors applied and modified the scale for the measurement of perceived behavioural control of the students in higher education, as well as the intention to engage in unethical behaviour, by Harding et al. (2007) and Stone et al. (2009), while the measurement scale is related to actual unethical behaviour of students according to Stone et al. (2009). The questionnaire consisted of three parts. In the first part, attitudes, subjective norms, perceived behavioural control, actual behaviour, and the intention to engage in unethical behaviour in higher education were examined. The second part of the research was aimed at finding out to what extent, when, and why the participants (students) behave unethically. And the last part of the questionnaire was related to the socio-demographic characteristics of the participants.

Every scale used in the questionnaire was created using the five-point Likert measurement scale, where the participants were given the opportunity to express their level of agreement or disagreement with the specific statements in the questionnaire. The research results were obtained using the statistical package SPSS 18.0. Descriptive statistics, multivariate analysis (factor analysis, method of principal axis factoring, reliability analysis, correlation analysis, and linear regression), and analysis of variance (ANOVA) were used for data analysis.

4.1. Research results

The number of items included in each construct and basic reliability measures is shown in Table 2. All constructs have an appropriate level of internal consistency measured by the Cronbach's Alpha coefficient[1] and the average inter-item correlation. The aim of this paper is to validate the use of the modified Theory of Planned Behaviour for predicting students' unethical behaviour, while observing the influence of perceived behavioural control on students' actual engagement in unethical behaviour and the intention for engaging in unethical behaviour in higher education.

Table 2: Reliability Measures of the Constructs (Authors' work)

Measurement scale	Number of items	Mean	Variance	Standard deviation	Cronbach's alpha	Average inter-item correlation
Intention	11	19.78	49.126	7.009	0.873	0.401
Perceived behaviour control	7	18.66	29.909	5.469	0.759	0.438
Behaviour	15	30.86	138.875	11.785	0.870	0.403

If we look at the mutual correlations between the perceived behavioural control, actual behaviour, and the intention to engage in behaviour, the hypotheses referring to the positively directed perceived behavioural control that affects the intention to engage in unethical behaviour of the students in higher education and positively affects the actual behaviour of students in higher education can be confirmed (Graph 1). Therefore, if the perceived behavioural control of the students is greater, the actual unethical behaviour of students is also greater, as well as their future intention to engage in unethical behaviour. The stated information would mean that the students believe that behaving unethically is simple and that it affects the higher probability of intentions to engage in future unethical behaviour. The reverse also applies.

Graph 1: Correlations Analysis (n = 622) (Authors' work)

---
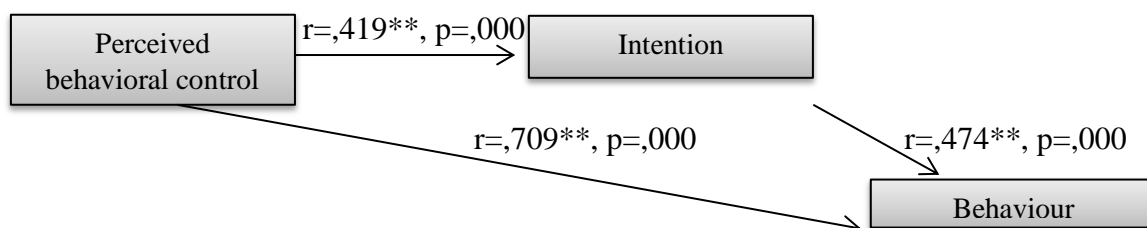
[1]George, Mallery (2003, p. 231) have provided the following rules of thumb: _ > .9 – Excellent, _ > .8 – Good, _ > .7 – Acceptable, _ > .6 – Questionable, _ > .5 – Poor, and _ < .5 – Unacceptable.

The linear regression model is shown in Table 3. Regression analysis is used to determine the relationship between the observed variables, i.e. the influence of independent variables on the dependent variable. It shows a significant predictive power of perceived behavioural control and behaviour on students' (un)ethical behaviour. The results reveal a statistically significant positive relationship between the student's intention to engage in unethical behaviour and the perceived behavioural control and behaviour. The model explains 51% of the variance in the intentions to engage in unethical behaviour in total.

Table 3: Linear Regression Model (Authors' work)

Predictor variable	β	t	Significance	Model
Perceived behavioural control	.111	3.193	.001	R = 0.716
Behaviour	.657	18.948	.000	R2 = 0.512 F = 45.149

Dependent variable: Intention to engage in unethical behaviour
Predictors: (Constant), PBC, behaviour
Model explains 51.2% of variance

Exploratory factor analysis was used to compress the number of all factors of behaviour for the analysis (Table 4). The goal is to find out which factors of current behaviour are most significantly affected by the perceived behavioural control of students in higher education. The used variation method is the varimax factor rotation with Kaiser Normalization. Factor analysis and consistency analysis include all three research iterations and 15 variables. The sample includes 41%, i.e. 255 respondents, et al. have been excluded from factor analysis due to their instability. Since the sample size needs to be five times larger than the number of factors in the analysis, this requirement has also been satisfied.

Table following on the next page

Table 4: Results of the factor analysis (Authors' work)

Variables of Behaviour predictor	Factor 1	Factor 2	Factor 3	h²
Used notes on test without the professor's permission.	.459			.498
Copied a few sentences from a source but not given credit (in midterm paper)	.364			.225
Copied from another student and turned in as own (in midterm paper)	.578			.437
Turned in midterm paper done by others.	.623			.421
Turned in team midterm paper done by others.	.597			.425
Copied a few sentences from a source but not given credit (in final paper)	.385			.183
Copied from another student and turned in as own (in final paper)	.674			.636
Turned in final paper done by others.	.706			.562
Helped someone who I know who cheated on a test		.870		.786
Helped someone who I don't know who cheated on a test		.911		.893
Copied from another student on test.		.618		.565
Collaborated on midterm paper that was supposed to be individual work (with someone who I know)			.394	.202
Collaborated on midterm paper that was supposed to be individual work (with someone who I don't know)			.694	.613
Collaborated on final paper that was supposed to be individual work (with someone who I know)			.683	.520
Collaborated on final paper that was supposed to be individual work (with someone who I don't know)			.829	.799
Eigenvalue	4.428	8.99	1.584	
% of variance	29.520	59.921	10.559	100
Number of variables in factors	8	3	4	

The total Cronbach alpha coefficient of 0.870 confirms the good reliability and stability of the measurement instrument. Principal Axis Factoring was applied. Data suitability was calculated using the KMO (Kaiser-Meyer-Olkin) measure of sampling adequacy and its value is .845, which is rather high, indicating that the factor analysis is appropriate. Bartlett's test of sphericity is significant (χ^2=1926.775, df=105, Sig.= .000), which indicates a strong correlation between the variables and factors, and their appropriateness for the exploratory factor analysis. The exploratory factor analysis has extracted three factors, consisting of 15 variables.

- Factor 1: independent unethical behaviour by students
- Factor 2: cooperation with other students in unethical behaviour (final and midterm exams)
- Factor 3: cooperation with other students in unethical behaviour (final paper, seminar)

Based on the mentioned information, the analysis of reliability of individual factors and the intention to engage in unethical behaviour was conducted. Table 5 shows that all predictors have an appropriate level of internal consistency measured by the Cronbach's alpha coefficient, and an average inter-item correlation.

Table 5: Reliability measures of the constructs (with three new factors of predictor behaviour) (Authors' work)

Measurement scale	Number of items	Mean	Variance	Standard deviation	Cronbach's alpha	Average inter-item correlation
Intention	11	19.78	49.126	7.009	.873	.401
Perceived behaviour control	7	18.66	29.909	5.469	.759	.438
Behaviour: Factor 1	8	16.01	49.57	7.040	.805	.758
Behaviour: Factor 2	3	6.5	10.023	3.166	.865	.812
Behaviour: Factor 3	4	8.27	17.16	4.142	.784	.537

Before developing the linear regression model, it is necessary to determine if there is a statistically significant correlation between the observed factors of student behaviour and the perceived behavioural control of students in higher education, as well as the students' intention to engage in unethical behaviour. Table 6 shows the results of Pearson's correlation. Both factors are in positive statistical correlation with the intention to engage in unethical behaviour.

Table 6: Correlations analysis (n = 622) (with three new factors of predictor behaviour) (Authors' work)

Predictor variable	Perceived behaviour control		Intention to engage in unethical behaviour	
	Pearson's correlation	Statistical significance	Pearson's correlation	Statistical significance
Behaviour: Factor 1	.242**	.000	.613**	.000
Behaviour: Factor 2	.282**	.000	.301**	.000
Behaviour: Factor 3	.220**	.000	.258**	.000

*Correlation is significant at the 0.05 level (2-tailed).
**Correlation is significant at the 0.01 level (2-tailed).

The linear regression model is shown in Table 7. It shows a significant predictive power of all three factors of the Behavioural Predictor on the students' (un)ethical behaviour. On the other side, perceived behavioural control has no significant power on the students' (un)ethical behaviour. The results reveal a statistically significant positive relationship between the students' intention to engage in unethical behaviour and the behaviour (three factors). The model explains 62% of the total variance in the intention to engage in unethical behaviour.

Table 7: Linear Regression Model (Authors' work)

Predictor variable	β	t	Significance	Model
Perceived behavioural control	.036	0.789	.431	R = 0.789 R2 = 0.623 F = 45.109
Behaviour: Factor 1	.674	15.548	.000	
Behaviour: Factor 2	.329	7.590	.000	
Behaviour: Factor 3	.284	8.860	.000	

Dependent variable: Intention to engage in unethical behaviour
Predictors: (Constant), PBC, behaviour (three factors)
Model explains 62.3% of the variance

5. CONCLUSION, LIMITATIONS AND FURTHER RESEARCH

The conducted research and the research results have displayed the results regarding the intentions to engage in unethical behaviour by students in higher education. For research purposes, the Theory of Planned Behaviour was used to determine the mutual relationships. The goal of the paper was to show the perceived behavioural control of students in higher education. The conclusion is that the perceived behavioural control, as a new predictor in the Theory of Planned Behaviour, is extremely important for identifying the perceived difficulty or ease of performing the behaviour itself. Two hypotheses were presented at the beginning of the paper:

H1: Students' perceived behavioural control positively influences their real behaviour when engaging in unethical behaviour

H2: Students' perceived behavioural control positively influences their intention to engage in unethical behaviour

Based on the research results, it can be concluded that both hypotheses were confirmed. Namely, if the mutual correlation relationships between the perceived behavioural control, actual behaviour, and the intentions to engage in a behaviour are observed, hypotheses that say that there is a positively directed perceived behavioural control that affects the intention to engage in unethical behaviour by students in higher education and positively affects the actual behaviour of students in higher education can be confirmed. In order to further confirm the connections between the observed variables, the predictor behaviour differentiates into three new factors through factor analysis (Factor 1: independent unethical behaviour by students; Factor 2: cooperation with other students in unethical behaviour (final and midterm exams); Factor 3: cooperation with other students in unethical behaviour (final paper, seminar)), and also, a positive, statistically significant correlation was determined between all three factors of the behavioural predictor and the perceived behavioural control and also, between all three factors of the behavioural predictor and the intention to engage in unethical behaviour. Also, regression analysis has demonstrated a significant predictive power of all three factors of the behavioural predictor on the students' (un)ethical behaviour. This study is limited to the perceptions of business students, at only one institution of higher education. Further research should examine other institutions of higher education (private and public) and compare their perceptions to the students' perceptions of unethical behaviour. Second, this paper took into account only the predictor perceived behavioural control of students in higher education, and the inclusion of other predictors from the Theory of Planned Behaviour would provide a full picture of the intentions to engage in unethical behaviour by students, which will be analysed, discussed, and presented in further papers.

LITERATURE:
1. Aiken, L. (2002). *Attitude and related psychosocial constructs*. Thousand Oaks: Sage.
2. Ajzen, I. (1988). *Attitudes, Personality, and Behavior*. Chicago, IL: Dorsey Press.
3. Ajzen, I. (1991). Theory of planned behavior. *Organizational behavior and human decision processes.* 50, 179-211.
4. Ajzen, I. (2002). Perceived behavioral control, self-efficacy, locus of control, and the theory of planned behavior. *Journal of Applied Social Psychology.* 32(4), 665–683.
5. Ajzen, I., Fishbein, M. (1980). *Understanding Attitudes and Predicting Social Behavior.* New Jersey: PrenticeHall, Englewood Cliffs
6. Ajzen, I., Fishbein, M. (2004). Questions raised by a reasoned action approach: comment on Ogden. *Health Psychology.* (23)4, 431–434.
7. Ajzen, I., Fishbein, M. (2005). The influence of attitudes on behavior. In Albarracin D., Johnson, B.T., Zanna, M.P., *The Handbook of Attitudes*. Mahwah, NJ: Erlbaum, 173-221.

8. Ajzen, I., Madden, T.J. (1986). Prediction of goal directed behavior: Attitudes, intentions, and perceived behavioral control. *Journal of Experimental Social Psychology.* 22, 453-474.
9. Armitage, C.J., Conner, M. (2001). Efficacy of the Theory of Planned Behaviour: A meta – analytic review. *British Journal of Social Psychology.* 40, 471-499.
10. Beck. L., Ajzen, I. (1991). Predicting dishonesty actions using the theory of planned behavior. *Journal of Research in Personality.* 25, 285-301.
11. George, D., Mallery, P. (2003). *SPSS for Windows step by step: A simple guide and reference.*, 4th ed., Boston: Allyn & Bacon.
12. Harding, T.S., Mayhew, M.J., Finneli, C.J., Carpenter, D.D. (2007). The Theory of Planned Behaviour as a Model of Academic Dishonesty in Engineering and Humanities Undergraduates. *Ethics&Behaviour.* 17(3), 255-279.
13. Kit Chang, M. (1998). Predicting Unethical Behavior: A Comparison of the Theory of Reasoned Action and the Theory of Planned Behavior. *Journal of Business Ethics.* 17, 1825–1834.
14. Lin, C-H.S., Chen, C-F. (2010). Application of Theory of Planned Behavior on the Study of Workplace Dishonesty. In: *International Conference on Economics, Business and Management*, Manila Philippines, 66-69.
15. Marangunić, N., Granić, A. (2012). TAM – četvrt stoljeća istraživanja *Suvremena psihologija.* 15, 205-224.
16. McCabe, D.I., Trevino, L.K., Butterfield, K.D. (2002). Honor codes and other contextual influences on academic integrity: A replication and extension of modified honor code settings. *Research in Higher Education.* 43, 357-378.
17. McEachan, C., Conner, M., Taylor, N., Lawton, R. (2011). Prospective prediction of health-related behavior with the TPB: a meta-analysis. *Health Psychology Review.* 5(2), 97 – 144.
18. Smith, A.Y. (2015). *Attitude, Subjective Norm, and Perceived Behavioral Control as Indicators for Nurse Educators' Intention to Use Critical Thinking Teaching Strategies: a Structural Equation Model Analysis* (PhD Thesis). Andrews University, Michigan, USA [AY. Smith].
19. Stone, T.H., Jawahar, I.M., Kisamore, J.L. (2009). Using the theory of Planned Behavior and Cheating justifications to predict academic misconduct. *Career Development International.* 14(3), 221-241.
20. Stone, T.H., Kisamore J.L., Jawahar, I.M. (2007). *Predicting Academic Dishonesty: Theory of Planned Behavior and Personality*. Ottawa, Ontario: ASAC.

INFORMATION GAPS AND BARRIERS IN STRATEGIC FARM MANAGEMENT IN POLAND - STUDY RESULTS

Jacek Jaworski
Finance Department, WSB University in Gdańsk, Poland
jjaworski@wsb.gda.pl

Katarzyna Sokolowska
Economic Department, WSB University in Gdańsk, Poland
sokkat@wp.pl

Tomasz Kondraszuk
Organisation, Country Department of Economics and Organisation of Enterprise,
Life Science University in Warsaw, Poland
tomasz_kondraszuk@sggw.pl

ABSTRACT
The purpose of the paper is to present the results of empirical research on the gaps and barriers in obtaining and using strategic information in farm management in Poland. The study was based on a questionnaire method for the data collection and statistic measures for its analysation. The strategic information concerns strategic decisions which shape existence and functioning of the organisation in the long term and determine all important tasks and activities in the short term. The gaps in strategic information are defined as perceived by the decision makers lack of this information. The information barrier is an obstacle hindering or precluding the use of information or its dissemination. Therefore, information barriers are the cause of the information gaps during decision-making. The most important gaps for farmers of external strategic information are gaps characterising the demand for agricultural products, as well as the agricultural policy of the government and the EU. Among internal information, the farmers reported the lack of information about the financial position of the farm. As the main information barriers, farmers pointed out the problems with obtaining and processing information. In this regard, the internal barriers (lack of time and / or employees) or externally (inadequate policy information based on the public institution) were equally important. Another important barrier is inadequate preparation of the farmers to use the information accordingly (low intelligibility of information and belief that they are not needed during decision making). The most important limitations of the research and its conclusions are: the limited scope of the study only to Poland and the limited list of the gaps and barriers used in the survey.
Keywords: *farm management, information gaps, information barriers, strategic information*

1. INTRODUCTION

Nowadays, the quality of the management process is especially important because of modernisation, strong competition and economic conditions. The effectiveness and efficiency of management is one of the most significant determinants of organisations' success. In turn, the acquisition of information and its proper use are necessary conditions for appropriate and rational decisions. In this regard, an interesting area of research is to determine the classes and types of information which lack during decision making that are experienced by the managers and of course to identify the causes of such situations. The above conditions also concern to entities operating in agriculture. They produce from 3.4% to 4.9% of Polish GDP and employee ca. 16% of all workers in Poland. Their products determine almost 10% of the national exports. (Polska, 2012). Thus, studying present and searching for modern, relevant to the present days conditions of the farm management is an important task supporting the development of the

Polish economy. The aim of this paper is to present the results of empirical research concerning the gaps and barriers in obtaining and using strategic information in the farm management sector in Poland. The questionnaire method is used for obtaining data and the basic measures of descriptive statistics are used for its analysis.

2. STRATEGIC INFORMATION AND ITS IMPORTANCE IN FARM MANAGEMENT

Polish agriculture mainly consists of family farms. Family farms are a particularly complex system. In addition to the organic nature arising from the complexity of production and organisation, the families nature of the activity is the important, distinguishing feature. Resulting from this point of view, the idea of paternalism consisting of cultivating special family values is often the reason for putting family development in the first place. However, it is not difficult to observe the adjustments to the other side and subordinate family members' behaviour for agricultural needs. In this context, farm and farmer's homes create the two-components for organisation (Kondraszuk, 2006). In family farms, the direct responsibility of the decision-makers is especially felt and expressed. The farmer and his family bear all of the consequences of good and bad decisions. Unity of managerial and executive work makes that instead of spectacular decisions from the managerial staff, there is a daily commitment to the simultaneous, current, operational and strategic decision-making. The result of it is a growing demand for timely and reliable information. Such information is the main factor in reducing uncertainty, estimating the size of the risks, opportunities and threats associated with the adoption of specific activities in the organisation (Meadow, Yuan, 1997). The strategic information concerns strategic decisions and their nature. It is used by managers in strategic management. It means that this information relates to the fundamental objectives of the organisation, associated with its vision and mission. Decisions supported by strategic information shape existence and functioning of the organisation in the long term and determine all important tasks and activities in the short term. (Choo, 2006; Citroen, 2009, p. 47). The genesis of studies concerning importance of strategic information in the management process is dated back to the 70s. The most important empirical studies were conducted by Allen (1990), Meadow and Yuan (1997), Kroll and Forsman (2010). In Poland this topic was taken up by Sopińska (1999) and Maik et al. (2010). The studies were conducted primarily among companies and their managers came to the conclusion that the information has a vital role in building their strategies. However, the role of sources and classes of this information is variable and dependable on the time, place and nature of the business. These findings are confirmed for farmers. The studies among farmers were conducted by Brent, Akridge and Whipker (2000), Just and Zilberman (2002), Adhiguru, Birthal and Kumar (2009). The main distinctive feature of the entrepreneurs and the farmers turned out to be communication channels. The managers of enterprises definitely prefer personalised channels (personal contacts, phone calls, etc.). The farmers used non-personalised communication channels more often. In the case of highly developed economies, farmers used specialised guides and professional publications. In developing economies, public radio and television were the most popular. Polish authors (Dzieża, 2003; Cupiał, 2010) also highlight the importance of information in the management of the agricultural entities. Their studies focused on the sources of information used by farmers. They show that the most important information in decision making is from the agricultural advisers and institutions of local government. The systematics of strategic information in the literature is not clearly defined. Many criteria are used and the resulting division is usually very large. The most frequently mentioned among them is the internal division (the source is from within the organisation) and external (the source is from the organisation's environment) information (Wrycza, 2010, pp. 63-65).

The studies on importance of the strategic information content (Citroen and Hooghoff, 2003, pp. 48-66; Brenner, 2005) indicate that in addition to key information about the interior of the organisation (financial situation, product offering, manufacturing capabilities), the information about the structure of the market, competition, customers' attitudes, new technologies, legislation, and about the relations of organisations with the wider environment play also being an important role. The cited studies show that the most advantageous situation from the point of view of the organisation is to make decisions when the decision maker is adequately informed. The comfort of decision making and rationality of decisions depend on the scope, adequacy, detail and timeliness of the available information. Unfortunately, in this regard there are usually some gaps in information which can be used. These gaps are defined as perceived by the decision makers lack of information. This lack is affected - on the one hand – by the requirements of observations related to its purpose, and on the other hand – by the level of knowledge and experience of the users information and the scope, structure, level of completeness and sufficiency of the information (Flakiewicz, 1987 , pp. 28). The concept of information gaps is related to the information barrier. The information barrier is an obstacle hindering or precluding the use of information or its dissemination. It concerns linguistic, economic, technical, ideological conditions and many others which take part in the distribution of acquiring, transferring, providing and use of information (Jaworski, 2012). Therefore, information barriers are the cause of the information gaps during decision-making. Wide theoretical and empirical studies on classification and characterisation of information barriers were conducted by Świgoń (2011). She distinguished the following barriers:
1) related to the identification and acquisition with the use of information,
2) resulting from the entities cooperating with information users during decision-making,
3) resulting from inadequate abilities of the information users,
4) related to processes and the mental states of the information user which block effective use of information.

The recognition of characterised gaps and information barriers helps to determine the nature of the demand for information and identify obstacles to their use. As a consequence, it could support ensuring the supply of relevant and useful information. Therefore, it is an important task in management studies, especially in agriculture.

3. MATERIAL AND RESEARCH METHOD

The identification of information gaps experienced by Polish farmers was based on the survey study. The survey included farmers from all over the country drawn in layers according to the structure of the total population (Charakterystyka..., 2011) (Table. 1). The survey was conducted using PAPI (Paper and Pencil Interview) technique. After rejecting all incomplete or inconsistent responses 338 valid questionnaires were obtained. The analysis of the survey results was conducted using statistical tools, in particular measures of central tendency, distribution diversity and interval estimation. The respondents were asked two questions. The first concerned the information gaps: What lack of information do you feel managing your farm? The answer was to mention a maximum of three classes of strategic information defined in the survey (see Tab. 2). The second question was: What is the main reason that the information above referred are rarely used by farmers in decision making? The respondents assessed the significance of the barriers defined in the survey (see Table 3) on a scale of 1 to 5 (1 - the least important, 5 - the most important).

Table following on the next page

Table 1. Structure of the farms surveyed in accordance with selected characteristics (Source: own work)

Distinction	Number	%	Distinction	Number	%
Time of managing the farm			**Manager's sex**		
0 – 5 years	42	12.4	Female	67	19.8
Above 5 years	296	87.6	Male	271	80.2
Agricultural type			**Area**		
Open field cultivation	121	35.8	Up to 5 ha	58	17.2
Animal husbandry	98	29.0	6 – 15 ha	125	37.0
Horticulture	12	3.6	16 – 50 ha	111	32.8
Fruit-growing	16	4.7	51 – 300 ha	37	10.9
Mixed	91	26.9	above 300 ha	7	2.1
Region					
Lesser Poland and Pogórze	83	24.6	Mazovia and Podlasie	162	47.9
Pomerania and Mazury	29	8.6	Greater Poland and Silesia	64	18.9
Total number of respondents				**338**	**100.0**

4. STUDY RESULTS

Table 2 shows the numerical characteristics of the answer to the first question of the survey. They characterise the information gaps experienced by the farmers in accordance with specified classes of strategic information. The results are listed in order of the structure index. For the calculation of estimation error and the confidence interval, the confidence factor of 0.95 was adopted. The lack of information about the current and projected demand for farm products was the most often mentioned information gap. It was marked by more than half of the respondents (54.7%). From 49.4% to 60.0% of general population would indicate it with a probability of 0.95. Nearly 40% of the respondents indicated a significant lack of information about current and planned economic policy of the government and the EU and current and potential agricultural product buyers. Almost identical in both cases confidence intervals inform that this gap was felt by 30.4% - 41.2% of the farmers in general.

Table following on the next page

Table 2. Information gaps experienced by farmers (Source: own work)

I feel the lack of information on:	Assessment of farmers - basic measures		
	Structure index [%]	Estimation error [%]	Confidence interval [%]
The demand for farm products and its forecasts	54,73	2,71	49,43 – 60,04
Current and planned economic policy of the EU and the government	36,09	2,61	30,97 – 41,21
Current and potential agricultural product buyers	35,50	2,60	30,40 – 40,60
Current and forecasted financial situation of the farm	31,95	2,54	26,98 – 36,92
Current and planned law regulation	29,59	2,48	24,72 – 34,45
General economic situation in the country and the world	26,33	2,40	21,64 – 31,03
Current and new sources of financing sources	17,46	2,06	13,41 – 21,50
New agricultural products, production technologies	11,83	1,76	8,39 – 15,28
Competitors and their activity	10,36	1,66	7,11 – 13,60
I do not experience any lack of information	4,73	1,16	2,47 – 7,00
The labor market situation	3,55	1,01	1,58 – 5,52
Current and potential suppliers and subcontractors	3,55	1,01	1,58 – 5,52
The possibilities of starting activity on international markets	2,37	0,83	0,75 – 3,99

24.7% - 39.9% of the farmers experienced lack of information about the financial situation of the farm and the law regulation. In the research sample these gaps were indicated respectively by 31.9% and 29.6% of the respondents. Slightly fewer indications (26.3%) were received by lack of information on the general economic situation in the country and the world. A significant result (17.5%) also applies to the information gap concerning current new financing sources of agricultural activities. This answer would be marked by 13.4% - 21.5% of all farmers. The answers indicate also that 7.1% - 15.3% of the farmers experience two more gaps in information, namely the lack of information on new agricultural products, production technologies and the activities of competitors. These gaps were marked approximately by every tenth respondent. Only 4.8% of the respondents answered that they are sufficiently informed and they do not experience a lack of any information. This means that with a probability of 95% from 2.5% to 7% of all farmers taking strategic decisions are properly informed. The rest of strategic information classes (about current suppliers and subcontractors as well as the possibilities of starting activity on international markets) seem to be less important for the farmers. Lack of information in this field could be experienced by no more than 5.5% of all

farmers. Table 3 presents the numerical characteristics of the answer to the second questionnaire's question. The information barriers defined in the survey ordered according to the arithmetic average of notes obtained.

Table 3. Information barriers (Source: own work)

Information barrier	Assessment of farmers - basic measures					
	Arithmetical mean	Dominant	Median	Standard deviation	Variability coefficient [%]	Asymmetry coefficient
Lack of the time and /or employees to obtain and analyze information	3,5385	4,0	4,0	1,2541	35,44	- 0,5463
Lack of proper information policy of the central and local governments	3,4053	4,0	4,0	1,3203	38,77	- 0,5134
Belief that information is unnecessary in decision-making	3,1834	5,0	3,0	1,4398	45,23	- 0,2766
Low intelligibility of information provided	3,1124	3,0	3,0	1,2702	40,81	- 0,1950
Out of date of information available	2,8728	3,0	3,0	1,2151	42,30	- 0,0440
Insufficient involvement of institutions providing information to farmers	2,7899	3,0	3,0	1,2206	43,75	- 0,0155
Lack of specialized institutions providing information	2,7337	3,0	3,0	1,1985	43,84	0,0573
Use of wrong channels /methods for transmitting information	2,6509	1,0	3,0	1,2946	48,84	0,1017
Lack of computer software for supporting acquisition of information	2,5917	3,0	3,0	1,2005	46,32	0,2172
Inadequate education (experience) of farmers	2,4970	1,0	2,0	1,2113	48,51	0,3042
Other	1,1538	1,0	1,0	0,6933	60,09	4,6751
Total	**2,7769**	**1,0**	**3,0**	**1,3644**	**49,13**	**0,0732**

The resultant, arithmetic mean of all ratings is 2.78. Average below the centre of the used scale may indicate difficulties in identification or low awareness of the occurrence of information barriers among the farmers. It is quite surprising especially when the quite clearly outlined information gaps in the answers to the first question of the survey will be taken into consideration. The most common note was 1.0. Half the notes were indicated by 3.0. Evaluations were distributed evenly around the arithmetic mean what is evidenced by the low asymmetry coefficient. The farmers assessed lack of time and/employees to obtain and analyse information (3.543) and the lack of proper information policy of the central and local governments (3.40) as relatively they are the most important cause of information gaps. In both cases, the dominated note was 4.0. The same note was the median of the answers obtained. Above the middle of the scale, the farmers assessed the significance of two more information barriers defined in the survey: belief that information is not needed in decision-making (3.18) and low intelligibility of information available (3.11). The median was 3.0 and the dominant assessment for the first barrier was 5.0, and for the second 3.0. Out of date of information, insufficient involvement of the institutions and the lack of specialised institutions providing information can be considered as a medium significant barrier to the use of strategic information in the farm management. Average scores were ranged from 2.73 to 2.87. Both: median and dominant in all cases were in the middle of the scale used. The rest of the barriers included in the survey, namely: the use of wrong channels/methods for transmitting information, the lack of computer software for supporting acquisition of information and inadequate farmers' education (experience) were not considered as important by respondents. Average notes are in the range from 2.50 to 2.65. Dominants were ranged from 1.0 and 3.0. The high variability coefficients (35.4% - 60.1%) for the total barriers assessed show the fact that the farmers' responses were not explicit. Growing coefficients with decreasing arithmetic mean show that the less significant information barrier and the greater is the dispersion of answers. For the most significant barriers, farmers' assessments were more clustered around the mean (variability coefficient is 35,4%-45,2%). In turn, the negative asymmetry coefficients for barriers which were rated as the most and medium important show a left-hand distribution of scores. It means that the majority of them were higher than the arithmetic mean. In the case of less significant barriers, positive asymmetry coefficients indicate the right-hand distribution of ratings. It means that most of the notes were below the average.

5. CONCLUSION

In the era of the economy based on knowledge, information becomes one of the key resources of business entities. The studies show a growing demand for information among managers and its increasing importance as a factor influencing the rationality of decisions. Thus, one of the most important topics of the research is to recognise the information gaps experienced by managers and the barriers which are the reasons of these gaps. It also concerns the strategic information used in farm management. The study shows that only every twentieth farmer feels adequately informed. Polish farmers shaping their farm experience strategies above all the lack of the external strategic information. The dynamically changing environment introduces uncertainty into long-term decisions. The most commonly reported information gaps concern the demand side for the farms' products and what is related to this, agricultural Policy of EU and the central government. Among the internal information, the farmers reported the lack of information on financial situations of their farms. It applies to the current status as well as the future too. It can show farmers' anxiety in their products sales, especially in the light of the difficult financial situation in agriculture. Surprisingly in this context is contained that the farmers did not report the lack of information about the possibilities of exporting their products and output to the international markets. Low assessment of the information gaps concerning competitors may indicate a rather non intensive competitive contest in the sector.

The farmer's low interest of the information about the labour market can be interpreted similarly - Polish farmers are not afraid of problems with hiring new employees. Other information gaps were evaluated on average this means that they are experienced in building the farms' strategy, however they do not constitute the key obstacles. The problems with obtaining and processing information were pointed out by the farmers as the main information barrier. In this regard, equally important are internal barriers (lack of time and/or employees to obtain and analyse information) and external (inadequate information policy of the central and local governments). The significant barriers are also those related to the preparation of the farmers to the proper use of the acquired information. In this situation, important role play advisors who help the farmers to properly interpret their information. This is confirmed by the high notes of answers to another survey question - about the low intelligibility of the information. Very often there is a lot of information which are contrary to each other, and then the belief is formed not only in low intelligibility of the information, but also that they are not needed for decision making.

LITERATURE:

1. Adhiguru, P., Birthal, P. S. and Kumar B. G. (2009). Strengthening Pluralistic Agricultural Information Delivery Systems in India. *Agricultural Economics Research Review,* 22, 71-79.
2. Allen, B. (1990). New developments in economic theory: Information as an economic commodity. *American Economic Review*, 80(2), 268-273.
3. Brenner, M. (2005). Technology intelligence at Air Products: Leveraging analysis and collection techniques. *Competitive Intelligence Magazine*, 8 (3). 6-19.
4. Brent, A. G., Akridge, J. T. and Whipker L. D. (2000). Sources of information for commercial farms: usefulness of media and personal sources. *International Food and Agribusiness Management Review*, 3, 245–260.
5. *Charakterystyka gospodarstw rolnych. Powszechny spis rolny 2010 (Characteristics of Farms. Agricultural Census 2010)*, Warsaw: GUS (Central Statistical Office).
6. Choo, C. W. (2006). *The knowing organisation. How organisations use information to construct meaning, create knowledge, and make decisions*. New York: Oxford University Press.
7. Citroen, Ch. L. (2009). *Strategic decision-making process: The role of information*, The Netherlands: University of Twente.
8. Citroen, Ch. L., Hooghoff, P. (2003), Informatie in bedrijf: Externe informatie. In M. van Eck Popp, *Informatie in Bedrijf: Werkboek voor succesvol informatiebeheer*. Amsterdam: Otto.
9. Cupiał, M. (2010). Wykorzystanie źródeł informacji w gospodarstwach rolniczych Małopolski o różnym kierunku produkcji (Use of sources of information at farms in Lesser Poland with various production profiles). *Inżynieria Rolnicza (Agricultural Engineering)*, 14 (4), 37-42. [in Polish]
10. Dzieża, G. (2003). Identyfikacja źródeł informacyjnych dla potrzeb produkcji w gospodarstwach indywidualnych (Identification of information sources for purposes of production at family-owned farms). *Roczniki Naukowe Stowarzyszenia Ekonomistów Rolnictwa i Agrobiznesu (Scientific Yearbook of the Association of Agriculture and Agribusiness Economists)*, 5, 21-25. [in Polish]
11. Flakiewicz, W. (1987), *Systemy informacyjne przedsiębiorstw i instytucji (Information Systems of Enterprises and Institutions)*, Warsaw: PWE. [in Polish]
12. Jaworski, J. (2012), Bariery informacyjne w funkcjonowaniu małego przedsiębiorstwa (Information Barriers in Small Enterprise Functioning). *Ekonomiczne problemy usług (Economic Problems of Services)*, 80, 366-374. [in Polish]

13. Just, D., Zilberman, D. (2002). *Information Systems in Agriculture*, Califormia: Giannini Foundation of Agricultural Economics.
14. Kroll, S., Forsman, R. (2010), A slice of research life: Information suport for research in the United States. *OCLC Research*. Dublin - Ohio, [online] http://www.oclc.org/research.
15. Kondraszuk, T. (2006), Gospodarstwo wiejskie jako podstawa rachunku ekonomicznego – ujęcie metodyczne (Farm as Basis of Economic Calculation - Methodical Approach). *Roczniki Naukowe Stowarzyszenia Ekonomistów Rolnictwa i Agrobiznesu (Scientific Yearbook of the Association of Agriculture and Agribusiness Economists)*, 8 (1). [in Polish]
16. Maik, R., Gołoś, A., Szczerbacz, K. and Walkiewicz, P. (2010). *Strategiczne źródła informacji w działalności przedsiębiorstw. Raport z badania (Strategic information sources in business operations. Study report)*, Warszawa: PARP, 22-31. [in Polish]
17. Meadow, C. and Yuan, W. (1997). Measuring the impact of information: Defining the concepts. *Information Processing, & Management*, 33(6), 697-714.
18. *Polska 2012. Raport o stanie gospodarki (Poland 2012. Report of Economy Status)*, Warsaw: Ministry of Economy [in Polish].
19. Sopińska, A. (1999). *Podstawa informacyjna zarządzania strategią przedsiębiorstwa (Informational basis of business strategy management)*. Warsaw: Wyd. SGH. [in Polish]
20. Świgoń, M. (2011), Information limits: definition, typology and types, *Aslib Proceedings*, 63 (4), 364 - 379
21. Wrycza, S. (ed.) (2010). *Informatyka ekonomiczna (Economic Informatics)*, Warsaw, PWE. [in Polish].

THE IMPACT OF THE DIGITAL ECONOMY ON THE LABOR MARKET IN THE CZECH REPUBLIC

Jana Skoludova
University of Pardubice, Czech Republic
Jana.Skoludova@upce.cz

Jana Cerovska
University of Pardubice, Czech Republic
jana.cerovska@student.upce.cz

ABSTRACT

Many developed countries have been engaged in the Fourth Industrial Revolution for a number of years, fundamentally changing the nature of industry, energy, commerce, logistics and other parts of the economy and society as a whole. The digitization of the economy takes place in a wide range of sectors. In the context of digitization and robotization, human capital requirements will change. Business competitiveness, public performance and state power are conditioned by a number of factors, including the quality of human capital. Vision of Industry 4.0 reflects the overall trend towards a society that is increasingly encouraged by the computerization and cybernetization of most processes in the area of manufacturing, service and state functioning. These changes will have a major impact on the required qualifications and the labor market in general, taking into account also the social aspects of these impacts. New principles of work organization will be promoted, changes in the role of staff, changes in the structure and occupations of most professions, new skills will be required, impact on employment and unemployment will be reflected. The aim of this paper is to map opportunities and threats and changes in the requirements for the knowledge and skills of Y generation workers brought by Industry 4.0. The research methodology is based on the comparison of the researches conducted in the Czech Republic and the questionnaire survey focused on Y generation. This paper explores the latest technological trends and innovations. This paper brings a new insights into employment with the focus of current generations on the labor market, and recommendations for managers.

Keywords: *Digital Economy, Industry 4.0, Labour Market, Human Management Resources, Generation Y*

1. INTRODUCTION

Vision of Industry 4.0 reflects the overall trend towards a society that is increasingly encouraged by the computerization and cybernetization of most processes in the area of manufacturing, service and state functioning. Many developed countries have been engaged in the Fourth Industrial Revolution for a number of years, fundamentally changing the nature of industry, energy, commerce, logistics and other parts of the economy and society as a whole. Digital economy is associated with information technologies. Data processing work should be easy and quick. Systems management should be enable a manager to work more efficiently because of easy availability of information in different aspects of business. This brings with it the necessity to own employees who can work with information technologies, it will be a key factor for the competitiveness of the business for managers. Czech companies are currently facing a major challenge, Industry 4.0. It basically changes the enterprise's business within Industry 4.0 and Work 4.0. They are Y generation people who are a great opportunity for business with their habits in using the Internet, social networks and modern technologies. If generation Y and the upcoming generation of Z executives allow the business to work as expected, these workers can help not only in innovative workflow solutions.

Another key factor for different generational preferences is the process of rapid IT development that influences the world of business and management. An enterprise that demands prosperity in today's turbulent and globalizing environment should pay extraordinary attention to information technology in human resources management (Pitra, 2007). Therefore, many businesses reorganize their core business processes by investing in key technologies, such as cloud computing; business intelligence and social media (Oprescu & Eleodor, 2014). These changes and digital economy will have a major impact on the required qualifications and the labor market. The digitization of the economy takes place in a wide range of sectors. In the context of digitization and robotization, human capital requirements will change. Business competitiveness, public performance and state power are conditioned by a number of factors, including the quality of human capital.

1.1. Labor demand in ICT-intensive occupations in Czech Republic
The demand for ICT generic skills increased in a large majority of countries between 2011 and 2014. Technical report of OECD "New Skills for the Digital Economy" (2016) states that increasing use of Information and Communication Technologies at work is raising the demand for new skills along three lines: ICT specialist skills to programme, develop applications and manage networks; ICT generic skills to use such technologies for professional purposes; ICT complementary skills to perform new tasks associated to the use of ICTs at work, e.g. communicate on social networks, brand products on e-commerce platforms or analyse big data. On average, the proportion of workers using communication and information search (CIS) or office productivity software (OPS) daily increased by 0.9 and 0.6 percentage points. The growth trend continued in 2017 and growth is expected to continue in the years to come. Nevertheless, a significant number of workers using ICTs every day do not seem to have sufficient ICTs skills to use these technologies effectively, based on the results of the PIAAC assessment.
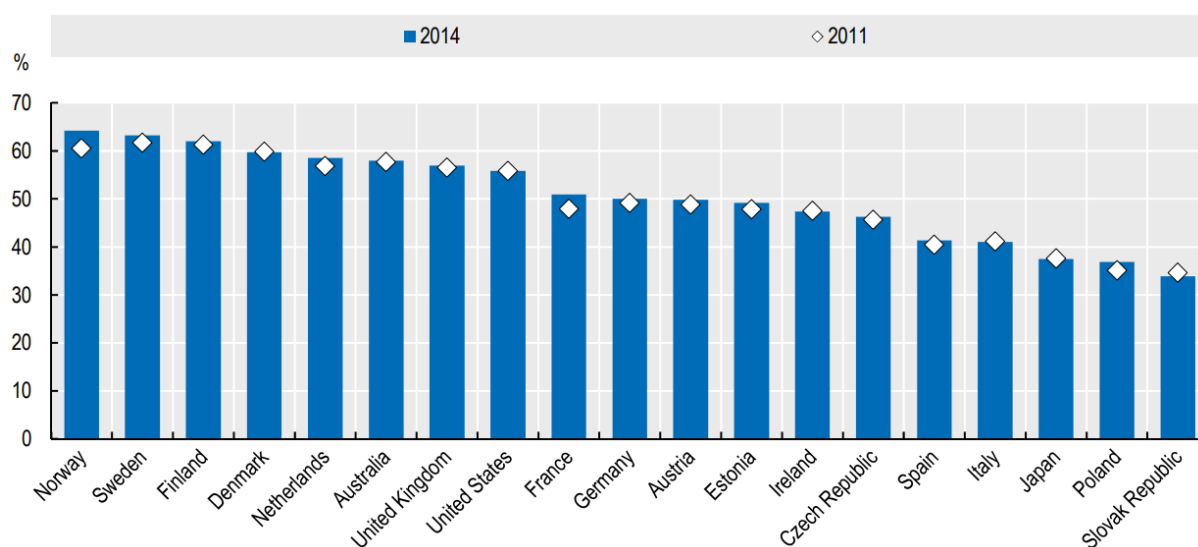
Figure 1: Demand for ICT generic skills (CIS) by country, 2011 and 2014, Share of employed individuals using CIS daily at work (OECD "New Skills for the Digital Economy", 2016)

Fig. 1 shows that the economy-wide CIS intensity at work varies significantly across countries. In Czech Republic between 2011 and 2014, the share of employment in CIS-intensive occupations was slightly increased. In Denmark, Ireland, Italy, Japan and the Slovak Republic, where there was a slight decrease. The increase was the most significant in Norway, followed by France and Poland.
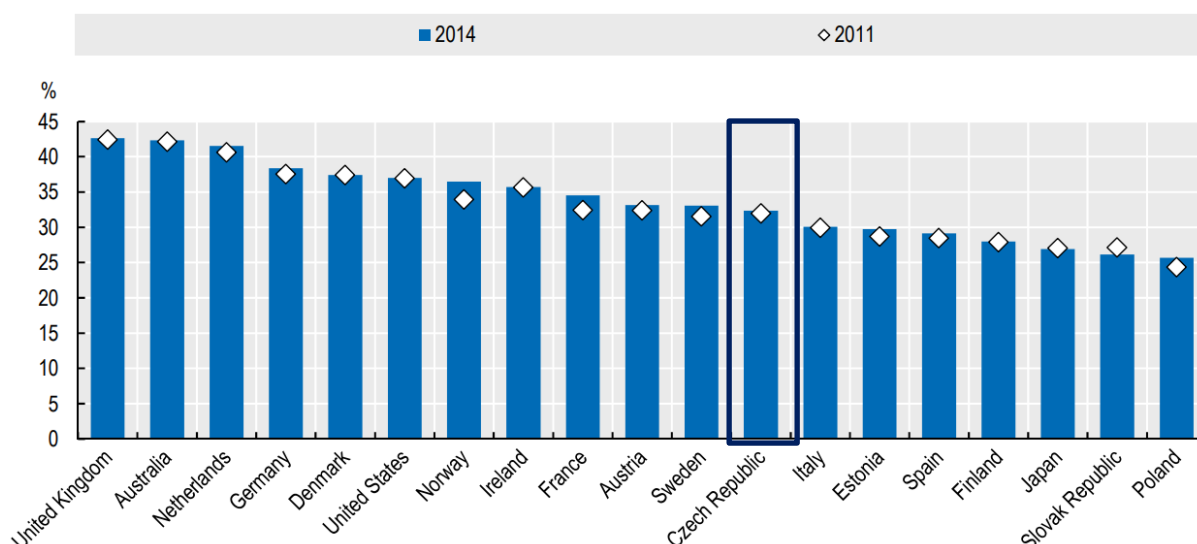
Figure 2: Demand for ICT generic skills (OPS) by country, 2011 and 2014, Share of employed individuals using OPS daily at work (OECD "New Skills for the Digital Economy", 2016)

Fig.2 shows the economy-wide OPS intensity at work in 2011 and 2014. In Czech Republic between 2011 and 2014, the share of employment in OPS-intensive occupations was slightly increased also. The most significant increase was observed in Norway, France followed by Sweden. The most decrease was observed in Slovak Republic and Japan. Technical report of OECD "New Skills for the Digital Economy" (2016) shows the top 20 ICT-intensive occupations for CIS and OPS skills by country. In Czech Republic are 6 CIS and OPS skills as follows:

- Legislators and senior officials
- Business services and administration managers
- Information and communications technology service managers
- Professional services managers
- Mathematicians, actuaries and statisticians
- Electrotechnology engineers

The digital economy brings higher demands on employees to work demand, especially knowledge of information technology (Kejhová, 2016). Changes in the tasks set associated to increasing use of ICTs tend to be larger for people in low-skilled occupations than for those in middle and high-skilled ones. On average, intensive use of ICT at work is associated with tasks that require more interaction with co-workers and clients, more problem solving as well as less physical work.

1.2. Workers of different generations on the labor market in the Czech Republic
Differences between generations are deepening, so the world is now sharing a number of fundamentally different generations, and it has never been more interesting and more important to address the issue of generations. The cultural influences during the formative years then give shape to life-long decision-making, values, goals and inclusion in society. There are a number of generations in the labor market in the Czech Republic, e.g. Silent Generation (born 1928-1945), Baby Boomers (born 1946-1965), Gneration X (born 1966-1979), Generation Y (born 1980-1994), Generation Z(born 1995-2014). Fig.3 shows representation of generations in the Czech Republic. This paper is dedicated to Y generation. Generation Y represents 20% of the Czech labor market.
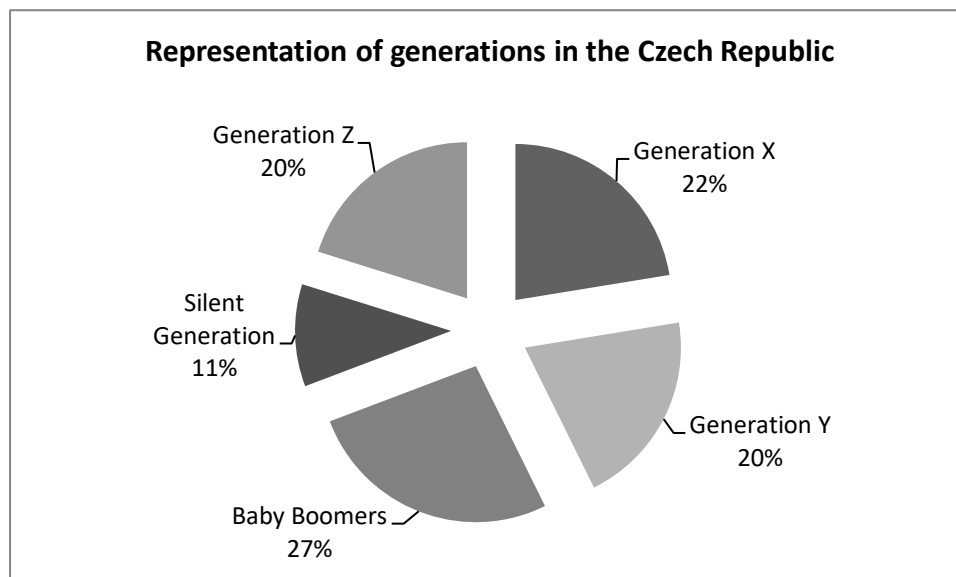
Figure 3: Representation of generations in the Czech Republic (Own calculation, Czech Statistical Office. Structure of the population as at 31 December 2016)

Generation Y needs to be addressed, to know their requirements and preferences (Tulgan, 2011). According to the research by ManpowerGroup and Reputation Leaders, "Vision 2020", generation Y follows when deciding where and how to work three basic priorities: money, security at work and leisure time (Dlasková, Kramer, 2017).

2. RESEARCH METHODOLOGY
The aim of this paper is to map opportunities and threats and changes in the demands for knowledge and skills of the workforce brought by Industry 4.0. Research is focused on generation Y, which currently account for 20% of the labor market. Research has been divided into three research areas. The first research area focuses on the properties required at the time of Industry 4.0. The second research area addresses the threats of robotization on the labor market. A third research area focuses on the expectations associated with digitization. The methodology of this paper is based on comparative qualitative research on the basis of a the questionnaire survey focused on Y generation in Czech Republic. The following criteria were established for selecting a sample of respondents:
- gneration Y (born 1980-1994);
- students in the Czech Republic;
- working citizens in the Czech Republic;
- unemployed citizens in the Czech Republic.

The return on the questionnaire survey was 54 %, and the survey was attended by 487 residents belonging to Generation Y. The determined hypotheses are set out below.

3. RESULTS OF THE RESEARCH
The first research area focuses on the properties required at the time of Industry 4.0. What skills will generation Y need for future employer in the digital economy? Respondents belonging to the generation Y believe that they will most need to be able to actively seek information, use information technology and effectively communicate online, see Fig. 4. Furthermore, the young generation Y realizes that at the time of Industry 4.0 they will have to have knowledge of digital technologies. In last place in the chart is the social intelligence, Generation Y does not see as significant in comparison to others.

79
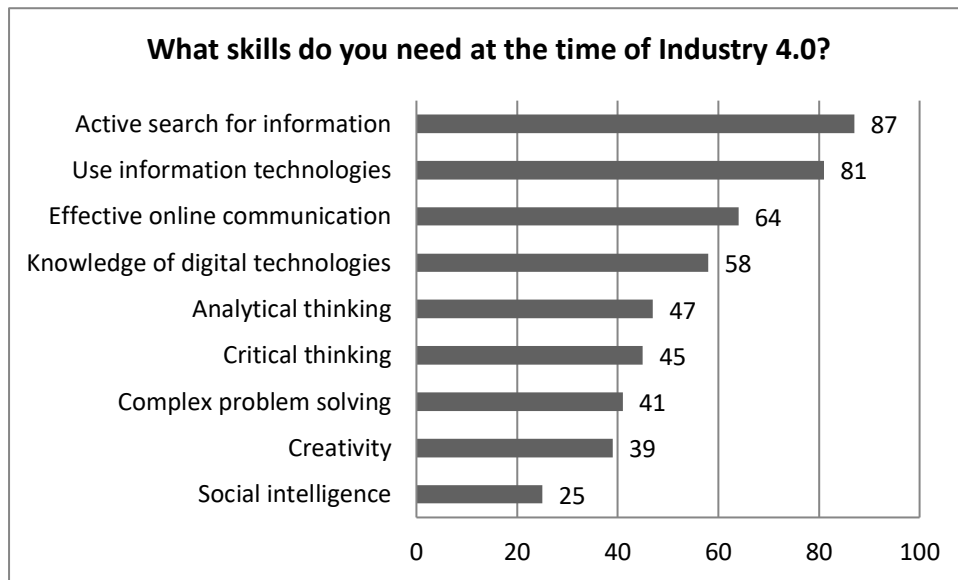
Figure 4: The necessary skills of generation Y in the digital economy (Own calculation)
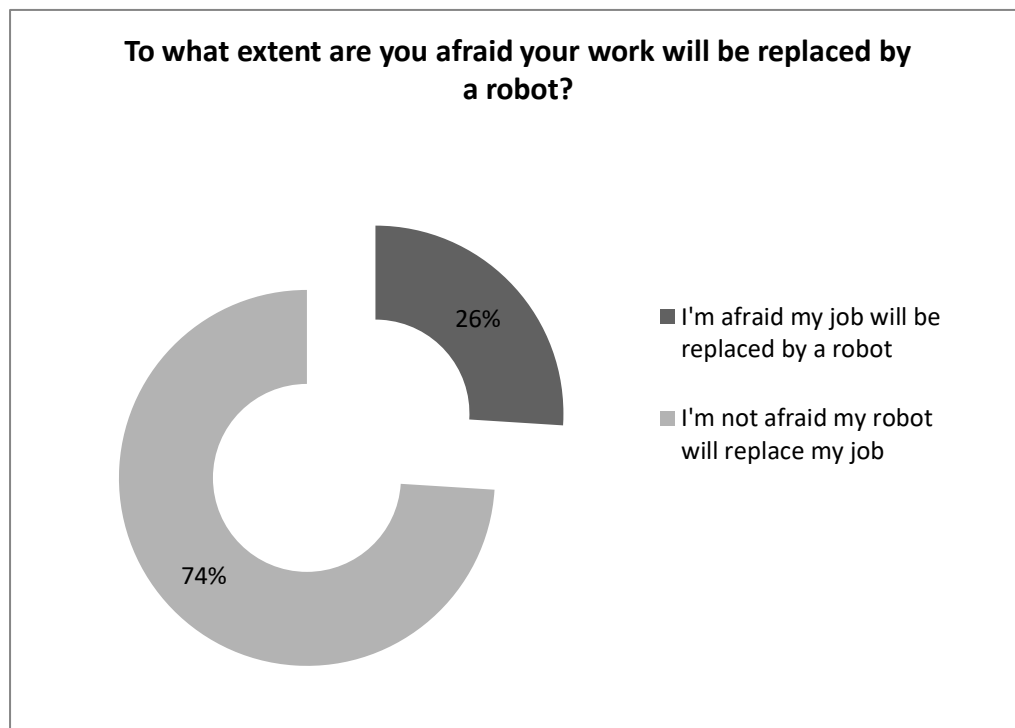
Figure 5: Fear of generation Y from robotization (Own calculation)

The second research area addresses the threats of robotization on the labor market. Fears gnerace Y that their job will be replaced by robots? Fig. 5 presents that, respondents of the Y generation express the view that they are not afraid of robotics, 74% of respondents (especially university educated respondents). However, 25% of respondents are afraid that their work will replace robots in the future (especially secondary-educated respondents). A third research area focuses on the expectations associated with digitization. What opportunities does the generation Y expect from the digital economy and Industry 4.0 in the future? Generation Y sees the opportunity in technologies that will enable smart home, smart city, and other. According to respondents everything will be "smart". Respondents expect virtual data to be displayed effectively. Generation Y also sees the opportunity of a digital economy for IT employees. Another opportunity of digital economy is shown in Fig. 6.
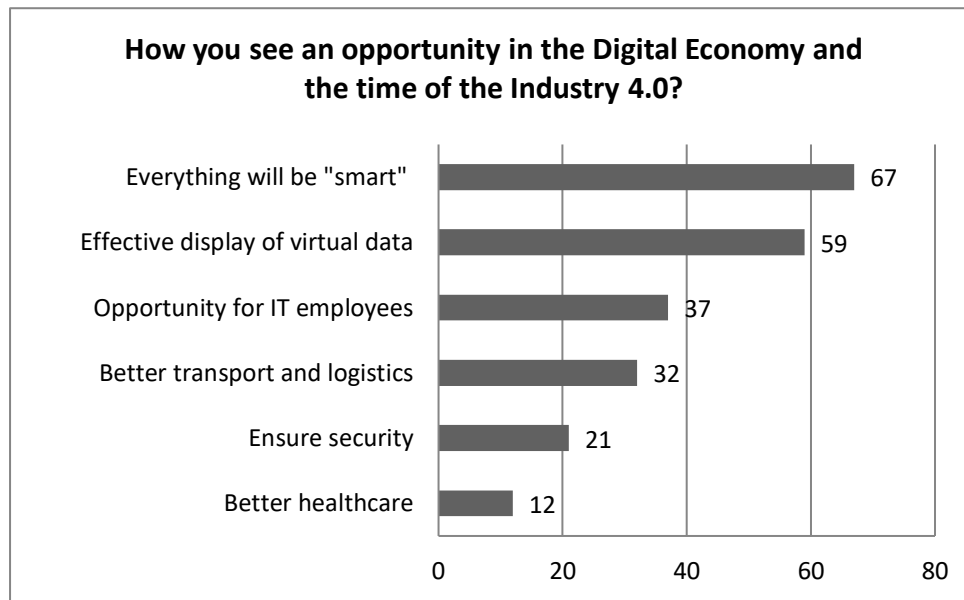
Figure 6: Opportunities of the Digital Economy and Industry 4.0 (Own calculation)

4. CONSLUSION AND DISCUSSION

The Fourth Industrial Revolution entails a number of opportunities, threats and issues. How will technical and manufacturing processes change, but how do they work in the labor market? Managers expect to change the composition of their jobs as well as their skills and knowledge requirements (Púllová, 2016). The Randstad Sourceright "2016 Talent Trends Report" was developed with the feedback and outlooks of nearly 400 HR, talent and business leaders from around the world. Through an online survey of respondents spanning more than 60 countries, Randstad Sourceright uncovered that the single most challenging talent management issue of today is a lack of critical talent and the resulting impact on the business, as well as a company's leadership and succession pipeline. (Randstad Talnets Trends Report, 2016). The survey results presented in the report also provide following key findings:

- 85 percent of respondents believe an integrated talent management approach in which workforce planning encompasses all types of talent, permanent and contingent alike, will enhance the resources their businesses need to drive growth.
- The use of talent and workforce analytics continues to increase, with 73 percent using this data to create more efficient workforce planning, 63 percent for more accurate mapping and addressing of skills gaps and 56 percent to clearly identify high-potential employees for development.
- When asked about the biggest trends impacting the future of work in the next 5 to 10 years, the top responses were the need to create greater flexible working options to attract mobile talent (85 percent), the ability to analyze internal and external employee data to source and retain talent (78 percent) and the challenge of keeping pace with evolving technology to enhance workforce productivity and performance (74 percent).

The results of the report show that 74 % of managers are aware of the need for information technology. Next, the study sought to find answers to the question: what skills and competences will be most valued for workers in 2020? The results of the survey are as follows:

- complex problem solving;
- critical thinking;
- creativity;
- people management;

- synergy with others;
- the emotional intelligence;
- judgment and decision-making;
- service focus;
- negotiation skills.

Compared to the results of the questionnaire survey, the skills that the generation Y will need in the digital economy and during Industry 4.0 have been identified. Respondents belonging to the generation Y believe that they will most need to be able to actively seek information, use information technology and effectively communicate online, see Fig. 4. Furthermore, the young generation Y realizes that at the time of Industry 4.0 they will have to have knowledge of digital technologies. The previous research coincides with critical thinking a creativity. According to the author of this paper, this result is crucial for further development. Employers will have to write these requirements in their job advertisements. And potential employees will have to prove these requirements. Moreover, managers have to take into account different generations, as described above. Digital economy also brings the need for IT knowledge. The demand for ICT specialists has been growing fast over the last years but the available evidence on.wage premia, vacancy rates and vacancy duration suggests that the potential shortage in ICT skills is not very large and limited to a small number of countries. However, available statistics are not fit to fully address these questions and the development of better measures is an important step for future work. The aim of this paper was to map opportunities and threats and changes in the demands for knowledge and skills of the workforce brought by Industry 4.0. Research was focused on generation Y, which currently account for 20% of the labor market. The results of the questionnaire survey show the significant skills that Generation Y expects in the digital economy and Industry 4.0, discussed above and can be seen in Fig. 4. Next research area was about fear of generation Y from robotization. Fig. 5 presents that, respondents (74 %) of the Y generation express the view that they are not afraid of robotics. The last research area is focused on the opportunities of the digital economy and Industry 4.0. According to respondents everything will be "smart". Respondents expect virtual data to be displayed effectively. Generation Y also sees the opportunity of a digital economy for IT employees. Another opportunity of digital economy is shown in Fig. 6. In the European context, author of this paper see the situation in the Czech Republic quite positive (SAP Study - Leaders 2020, 2017). We were one of the first countries to adopt this new situation conceptually, where there was an institutionalized structure of communication between industry and government. Our weakness is, however, in the implementation of strategies. However, the author of the paper hopes that this will be one of the first strategies that will be truly fulfilled in our country. If not, it may happen that what has been dragging us up (industry) can very quickly change in burden. It will be interesting to follow other trends and researches conducted in the area of Digital Economy and Industry 4.0. Other similar research could be done in other countries of the European Union and compare the results.

LITERATURE:
1. Czech Statistical Office. Structure of the population as at 31 December 2016. Retrieved from: https://www.czso.cz/.
2. Dlasková, K. Kramer, J. (2017). Moderní řízení. *Work by Ypsilon*. Issue LII, 11. ISSn 0026-8720.
3. Kejhová, H. (2016). Moderní řízení. *The role of IT Directors is changing. They move into the lead*. Issue LI, 12. ISSn 0026-8720.
4. OECD. (2016). *"New Skills for the Digital Economy"*, OECD Digital Economy Papers, No. 258, OECD Publishing, Paris. Retrieved from: http://dx.doi.org/10.1787/5jlwnkm2fc9x-en.

5. Oprescu, G, & Eleodor, D. (2014). The Impact of the Digital Economy's Development on Competition, In *Quality - Access To Success*, 15, pp. 9-20, Central & Eastern European Academic Source, EBSCOhost.

6. Pitra, Zbyněk. (2007). *Základy managementu: management organizací v globálním světě počátku 21. století*. 1. vyd. Praha: Professional Publishing, 350 s. ISBN 978-80-86946-33-7.

7. Púllová, H. (2016). Moderní řízení. *Study: The Future of Working in the Digital Age*. Issue LI, 12. ISSn 0026-8720.

8. SAP SuccesFactors. (2017). *Leaders 2020: How strong leadership pays off in the digital economy*. Retrieved from: https://www.successfactors.com/en_us/lp/leaders-2020.html?Campaign_CRM=CRM-XM16-GAM-HR_L202002.

9. The Randstad Sourceright *"2016 Talent Trends Report"*. Retrieved from: www.randstadsourceright.com/talent-trends-report.

10. Tulgan, B. (2011). Generation Y. In *Journal of Leadership Studies*, September 2011, Vol.5(3), pp.77-81. ISSN: 1935-2611.

GLOBALIZATION IN THE ARAB WORLD AND THE INFLUENCE OF GLOBAL ACCULTURATION (IRAQ AS AN EXAMPLE)

Jasim Mohammed Saadoon
Media Office of the Iraqi Council of Ministers; editor
Republic of Iraq, Baghdad, Salihia.Block.No.40
m.press6969@gmail.com

Lebedeva Larisa Vasilyevna
Rostov Institute for the Protection of Entrepreneurs,
Candidate of Law,
Associate Professor of the Department of Theory and History of State and Law
Russia, Rostov-on-Don, Serzhantova, 2/104
rose_75@rambler.ru

ABSTRACT

Globalization as a new concept has entered the Arabic region under different titles; it holds several indications. Its consequences became evident through various concepts like democracy, and state sovereignty, dominance, security and stability. The Arab world, being an eminent part of the Global Economic System, unsurprisingly showed cultural, political, social, and information interaction with the outer world. The Arabic economy proved its weakness and incompetency when facing global challenges. This demands that Arab states release themselves from the inherited approaches from countless eras. Economic cooperation urges the liberation of trade in the direction of inclusive development where the role of the state would be vital in attracting investments and controls fair distribution upon different productive sectors. Media has tangible impact upon the Arab region, and evident cultural features were sensed like information monopoly, importing TV programs, spread of consuming culture, westernizing national culture, manipulating knowledge for cultural infiltration, strengthening backwardness in the area, and formulating the masses cultural direction. In Iraq after the big political shift that it had witnessed, and the transformation from a closed totalitarian system into a free country, it is now a point of attraction for big economic states, especially after it was introduced to technology, the country is developing two parallel paths; positive and negative being strongly moved by political, economic, media, and cultural waves.
Keywords: Acculturation, Globalization, Influence of global, Iraq

1. INTRODUCTION

Globalization in third world countries (specifically in the Arab countries), is the activation and implementation of systems of interests among people. The political aspect is consider the most sensitive from the changes that imposed by globalization after the Western intervention in the region, which is related to economic developments. The United States pursue to be the only power the world, and without any competition in issuing resolutions or other poles that restore the balance to the world. Also it wants to preserve its interests through its presence in the Arab region, without considering any other state aims to take over states or governments in the region. The fast spread of communication, such as the Internet, have led to extremely important results on globalization like the propagation of democracy, human rights and the emergence of global civil society. This led to the creation of political opposition groups that presented their political agendas on the Internet and were accepted by the Arab people .However, at the same time, this led to a collision with the values and common ideas in the Arab societies, which led to instability. The Arab nation had lived through difficult years of tension, isolation, and inside crises.

The outside forces had their impact and globalization power has led to the creation of these crises and expand them among Arab countries. These crises have resulted in the severance of diplomatic, economic relations between countries, the closure of border crossings and the expulsion of workers. These crises might have been results of internal reasons, but the forces of foreign globalization had an essential role in fueling, and expanding the Arab-Arab differences.

2. THE UNITED STATES OF AMERICA IN THE GLOBALIZATION OF THE ARAB STATES

The collapse of the Soviet Union was one of the main reasons for a fundamental change in the structure of the international order, which paved the way for a fundamental change in the positions of states on the world. The existence of the former Soviet Union as a global pole was a reliable source of power. Western countries and powers that believed that a peaceful settlement of the conflict was not necessarily the best option. Therefore, the United States of America reached the only global strategic pole by leading the preface process of creating a new Middle East based on the American principles which see the development of democracy and achieve its interests in the region. The United States has achieved the it's aspirations depending on its own means of global power, through which it tries to use globalization for its benefit. The successive plans that the world is witnessing today for the birth of globalization are linked to the new American project which aim at uniting the world through market capitalism, and historical events have shown that the United States has the ability to use its maximum deterrent and decisive means to maintain its influence and control over the Middle East region, which has a vital location in the world. The United States of America and its allies with their enormous economic power, and multinational companies have been able to reduce the Arab regional order and its independent ability to move with the current international situation and its rapid changes. Thus , the era of globalization has been linked to the Arab regional system in a catastrophic period marked by two-way growth .The first is the foreign intervention that sought to force the Arab countries out of the national era, whether by political means, pressures, destabilization or the force they used to dismantle states, national systems .The second trend is the emergence of policies that have expressed timid reactions, lacking a vision of overall picture , based on random, irrational responses of divided elites, and generally lack of public opinion, and unaware of the nature of the bets, problems and real challenges .The United States of America found in the current Arab conditions, the chance to prove its role in the leadership of the international system , a shift that most Arab leaders failed to recognize.

3. THE EUROPEAN ROLE IN THE GLOBALIZATION OF THE ARAB STATES

We can say that the European influence in the Arab region had begun in the 19th century and as a result of the weakness of the Turkish state and the granting of privileges to the European countries in the Arab region, which is dedicated in the twentieth century and has not ended to this day, and evolved from the direct occupation of the Arab territories to political, economic and cultural influence in these days, which made the Arab countries belong to certain European countries in the scopes. Although US domination continued in the post-Cold War era, the EU was determined to play bigger role in the region, including the peace process which is dominated by the USA. However, the European role in the Middle East, as well as the US role, is based on a set of important foundations, which is reflected in the Mediterranean project that Europe seeks to implement in the Mediterranean region in accordance with Europe's security interests in the region. The implementation of the Mediterranean regional system from the point of view of the European countries provides the Mediterranean region with a security and economic umbrella and strengthens Europe's political and strategic position in the region.

This will help to establish a comprehensive Euro-Mediterranean partnership based on political, economic and social bases and results as:

1. Political and security partnership based on respect for national sovereignty, non-interference in internal affairs, respect for human rights and arms control in order to make the Middle East region free from mass destruction weapons .
2. Economic and financial partnership which aims to achieve permanent economic and social development.
3. Social, cultural and humanitarian partnership to cooperate in reducing illegal immigration through the development of local training programs.

This interest of the Europeans in the Middle East comes from being one of the vital circles of the European Community because it will become an economic power that no one can compete it. From the fact that the European support for the Middle East, especially the Arab countries, we notice that it is not only Europe as a union, but also some countries that provide assistance as individual. Germany the third economic power in the world and the most powerful European country is in the top list for aiding the region, especially the Palestinian territories, trying to reflect its contribution to aid to developing countries and helping the Palestinians. And it has long worked to provide support for the peace process with Israel. France foreign policy, on the other hand, relies on spreading its principles which derived from the French Revolution: justice, equality and the rule of law. It adopts its priorities through its support to other countries to strengthen democracy and law by focusing on administrative and justice reform. The goals vary from one European country to another according to their views and the nature of their relationship with other countries. Britain adopts its policy based on the historical heritage that linked it with its former colonies. It depends on the principle of the continued responsibility of the occupying state towards its former colonies. So we conclude that the vision of the donor countries and their strategy in the region is based on the realization of their projects in the region in many fields covering all the aspects of economic, political and social life. The European Commission stressed the need to develop the infrastructure of the States of the Arab region in the same way as the European Community countries at their initiation. Both of The United States of America, with its Middle Eastern project, and the European Union with its Mediterranean project, the most outstanding in this area, will be a kind of competition for this region in the next stage. We do not go far enough if we say that they will share the world, because of the American efforts are not very different from European ambitions and both aimed at diminishing risk and influence in the region's most promising markets, although the US administration is more determined to control the political and economic trends in the region.

4. THE SOCIAL ASPECT OF GLOBALIZATION IN ARAB COUNTRIES

Not only globalization has its effects on the economic and political aspect, but also on the social aspect. Every society has an old social framework based on customs, traditions, and reciprocal and interactive relations (Khalidi, 2012, pp. 22-23). But with the development and progress there is a new culture, which dominates the old culture through the tools of globalization, the media and communication, which affected the social cultural aspect of the ideas, behavior, ethics, social and environmental structure, which constitutes a barrier between the individual and his culture, replacing it with the culture of globalization. It is clear that there is a whole relationship between these different aspects, and each of them affects the other. Globalization in the Arab world is also a historic stage of human development, in which many political, economic and cultural changes take place through:

1. Information and communication revolution
2. The rise of global capital to the center of leadership in the process of capitalist development.
3. Growth and expansion of international companies through increased mergers.

The future of humanity for decades depends on the results of the confrontation between the forces of globalization and anti-globalization forces, especially in the Arab region, and the struggle against the globalization of neo-liberalism in order to provide the best conditions for the struggle of crushed and marginalized classes and save the gains that obtained through centuries of popular struggles and expand them. There also must be struggle against military globalization, which is the confronting the attack on the Arab region. The American war on Iraq and Afghanistan and the relations between Iran and the international community which sometimes take the tension and at other times with caution and anticipation, led to the emergence of a trend that sees the need to form an international front aimed at reducing the movement of American globalization and retain the identities and culture, which is the basis of dialogue between civilizations. Looking to another world and to a balance of different social forces requires a battle, but not necessarily in the direction of another kind of globalization. Rather, the development of the use of words is distinguished when replacing globalization with alternative globalization.

5. THE TREND OF ALTERNATIVE GLOBALIZATION IN ARAB COUNTRIES

The talk of an alternative globalization, no matter how good the intentions are, is a substitute for anti-globalization, as if it were a search for alternative capitalism, capitalism without wars, capitalism without racial discrimination, capitalism without poverty and oppression, capitalism without destruction of the environment, capitalism far from American dominance. The theme of alternative globalization emerged after the second meeting of the Social Forum. The French Friends of ATTAC pioneered the use of alternative globalization as a substitute for the fight against globalization, starting with those who followed them from. First, there is something positive about globalization, so it is necessary to counter only what is negative in globalization and that the task is to face the negative effects of globalization through the policies of neo-liberalism. And the policy of the American administration, especially on the Arab region maybe come from either they have a nostalgia for the state of "welfare" that emerged after the Second World War by many factors, the most important: the conditions of the Cold War and the cycle of the long expansion of capitalism, which is essentially a reactionary position. Or maybe they see globalization as an American attempt to dominate the world, which is a national position that is far from the nature of the anti-globalization movement that started as a humanist international movement seeking to create a better world. Second. The anti-globalization demonstration is reactionary, and they are a mixture of those who believe that globalization is a new revolution in capitalism as the bourgeoisie was in its ascendant phase. They often confuse the revolution of communications and information that took place in the last quarter of the twentieth century, which played a role in the concentration of capital and use the scientific development for further profit-taking and spreading the culture of globalization, and globalization as a structural change in the nature of capitalism, most notably the enormous amount of capital in few hands of individuals, and its new nature globally. That confronting of every single Arab country with globalization is not the right choice; rather the collaboration of nations is almost the inevitable choice. There is no sign of serious joint action to achieve this collaboration. We conclude that there is a great difficulty in "modeling" the phenomena in the Arab world (Abdel-Hay, 2011, p. 3), which indicates the depth of the chaos in the current Arab structure. Most of the hypotheses that apply to one level or another in other countries are not applicable in the Arab countries. The richest countries are the most backward and least liberal in politics at least, and there is no relationship between education and the level of empowerment of women. Some of the countries with the lowest levels of education are the most empowering of women, and religious conservative parties empower women more than secular parties.

6. IRAQ AND GLOBALIZATION

And Iraq is culturally subject to alienation trends and weak national and religious authenticity in the cultural and literary output that generally influenced in form and content by Western production without the ability to create texts that benefit from the development of the telling and the narrating, while retaining Iraq's cultural, spiritual, and religious theme, which distinguishes the original and creative output (Magdy, 2005, p. 78). Even in the field of sport, after the entry of professionalism to sports from the narrow doors, it is not a real professionalism to ensure the emergence of talented elements to take their chances forward, nor is it the control and guidance of the state sponsored sports activities to adopt the principle of hobby and ensure a decent living for athletes and competitors. Only the value system of Islam remained resistant to moral globalization, retaining family ethics, sexual abstinence, and faith, etc., which are the basis of the value system inspired by religion (Rashwan, 2005, p. 49). All this puts us in front of the question: why did not this system, with its solid foundations, push its members to abide in the four areas mentioned above and they are complaining of falling under the storms of globalization? The weight of the state in the Iraqi economy was imposed by the conditions of the previous stage of 2003 under the dictatorial regime. This role remained significant and important in light of the economic policies of intervention since the establishment of the modern Iraqi state after the fall of the former regime in 2003. This situation imposed great dependence on the private sector (industrial and agricultural) on government support, this occurred despite the structural change that globalization has made in the distribution of roles between the market and the state for more than two decades. Globalization is accompanied by the control of neo-liberal capitalism with its tools: the World Bank, the International Monetary Fund and the World Trade Organization, which have developed and become the top players in the fields of investment and capital movement, and often separated from the mother country, and become an independent entity which follow profit everywhere, regardless of nationality, patriotism and religion. (Kazem al-Bakri, 2011, p. 61). The destruction of the Iraqi economy due to three wars, the aftermath of the April 2003 change of war and terrorist acts, as well as the policy of uncontrolled openness, which led to a large increase in imports and the lack of local supply and production stopped almost completely and the decrease in exports (excluding oil). With the growth in oil exports, the symptoms of the so-called Dutch disease emerged so that agricultural goods lost their competitiveness with the imported goods, and the country became totally dependent on the outside, and these economic reasons stood as a factor in the spread of unemployment, besides of the security problems and the heavy legacy of previous regimes (Abbas, 2006, p. 80). This raises the problem of the contradiction between continuing the government support and the negative dependence of the private sector on the government without growth in a positive atmosphere, and walking behind the recipes of the international financial institutions such as the International Monetary Fund and the World Bank. The Iraqi economy was crushed by wars and the siege, moreover financial and administrative corruption made the situation worse. The question remains how do government economic policies face these challenges? What are the mechanisms of transition to a market economy to which Iraq is moving? What are the mechanisms of privatization of the public sector? What is the need for what we can call the "independent approach" (Amin, 2004, p. 35) for adaptation and economic reform that the Third World country can use as an economic approach that suits the needs of the population and their hope for a decent life. The objective conditions imposed a shift in the nature and philosophy of the economic system in Iraq from the central system based on the dominance of the state to a system embracing the philosophy of economic freedom and believes in the market forces and mechanisms, this represents the fundamental tool of economic reform, which was assigned by legal legislation. However, the reality does not indicate the clarity this vision, as the state's intervention in economic life increased through expansionary financial policy considerably since the change (Masaad, 2004, p. 73), thus avoiding the corrective role it

is supposed to play. Accordingly, economic decision-makers have faced a problem of adopting the neoliberal view of developed countries, which calls for the cessation of economic activity of the state and leave things completely for the private sector, but the problem is that the Iraqi private sector is not qualified and cannot take the responsibility to manage the economy. The defenders of this view believe that foreign investment is the alternative and is capable of introducing modern technology and methods of production and economic advancement. This means that if foreign investment does not enter for any reason, the continuation of the rent economy and reliance on oil and agriculture in the productive field, and on importation to cover food needs (Massad, 2008, p 132). Others argue that the trend towards economic freedom is a danger that must be avoided by keeping the public sector, as the country is facing a conflict between the public and private sectors as social systems.

7. CONSLUSION

The roots of the central crisis of the Arab countries is confronting the new world order, and the attempt to provide mechanisms for adaptation, if the Arabs want to occupy a position among the countries of the world, the only way out of is more cooperation, away from traditional alternatives such as tribe, sect, religion. Iraq is among the list of Arab countries that entered the system of globalization rapidly, and the only thing that has prevented globalization and is still the system of Islamic values in all its dimensions. On the political aspect, Iraq is adopting a liberal democracy without the infrastructure of this democracy, which has caused its abnormal application to fall even on the basis of the unity of the state and the people. On the economic aspect, Iraq is suffering from the fall of the oil value as a strategic commodity to a normal material which foreign companies take one-third of the output per barrel after rounds of contracts and licenses which are questionable in their integrity, validity and efficiency. The economic globalization in Iraq also includes the terms of the International Monetary Fund, on the Iraqi economy, the old debts and the "real and wrong" compensation that this agency have been programmed to do. Arab countries occupy very late positions in most fields, whether in politics, economy or sociology. And to emphasize the need to take into account that the phenomenon of globalization is a process that is not yet complete, rather continuous.

LITERATURE:

1. Khalidi, H. (2012). The effects of globalization on the Arab society. Saraya magazine, 2012 (№ 6), pp. 22-28.
2. Abdel-Hay, W. (16.03.2011). The Implications of Globalization on the Arab World. Al-Jazira: Center for Studies in cooperation with the Arab Science Foundation, pp. 3-7.
3. Kazem al-Bakri, J. (2011). Iraq in the storm: globalization and the Iraqi economy. Bagdad: Faculty of Management and Economics.
4. Magdy H. A. (2005). Globalization between disassembly and reordering: studies in the challenges of the New World Order. Cairo: The Egyptian Saudi Dar.
5. Rashwan, H. A. (2005). Secularism and globalization from a sociological perspective. Alexandria: Alexandria Book Center.
6. Amin, S. (2004). Globalization and the New International Order. Beirut: Future Books Series.
7. Masaad, M. M. (2004). The Arab society and the challenges of globalization. Cairo: The Technical Radiation Library.
8. Massad, M. M. (2008) Globalization of the economy in the balance: pros and cons. Alexandria: Modern University Office.
9. Abbas, N. (2006) The basics of business in the shadow of globalization. Alexandria: The Modern University Office.

THE CONDITIONING OF CHANGE MANAGEMENT – THE PERSPECTIVE OF MANAGERIAL STAFF

Joanna M. Moczydlowska
Bialystok University of Technology, Poland
joanna@moczydlowska.pl

Marta Wiacek
Krynica Vitamin SA, Poland
mwiacek3@poczta.onet.pl

ABSTRACT
Modern enterprises function in the quick-change environment. The external changes impose the necessity of flexible activity with keeping the priorities coming from strategic goals of the organisation. The sheer strategy also undergoes perpetual changes. These changes are both adaptable and developmental. In this context management of change grows to the rank of key competence. It is the competence of entire organisations which have to know how to activate their resources and support high level of organisational energy. So that implemented changes are the source of competitiveness and values. It is also the competence that is assigned to managers who make decisions about dynamics and process of changes. That is why diagnosing of managerial staff's opinion about the conditioning of change management had been considered as cognitively interesting. The inquiry form has been used as a research instrument. Middle and senior management (60 people) that represent corporate sector were involved in the research. It comes from the research that in the Polish enterprises adaptable changes (including mainly adjustment to changing rules of law) and the changes that constitute the answer to the crisis found in an enterprise dominate in Polish enterprises. Changes in the employment pattern, in organisational structure and technological ones are the most often made changes. The stakeholders who initiate changes are primarily the executive, the owners and also competing enterprises. Wrong policies of informing about the changes, making adjustments chaotically and employees' reluctance to the changes have been stated by the respondents as the most important barriers in management of change.
Keywords: *change management, barriers in management of change, managers*

1. INTRODUCTION
Contemporarily existing business entities that want to hold their competitive position and realise their strategy with a bang should flexibly and quickly respond to changeable environment. They should even anticipate these changes by treating them as a source of development and perfecting. Every organisation is a social system with individual and inimitable character. It leads to that change in such system is multifaceted phenomenon since it includes social, organisational and technical problems. It should be therefore analysed as dynamic phenomenon that requires adjustment of processes in their broad sense and professional change management. The aim of the article is to know the managerial staff' opinion about the conditioning of change management in their enterprises. The inquiry form has been used as a survey instrument.

2. LITERATURE REVIEW
The easiest way to divide the changes is inner and outer criterion (Heckmann, Steger, Dowling, 2016). The inner changes more often than not come from manager's decisions that aim at further organization development. On the other hand, the outer changes are derivative of events that have happened in organisation's environment and cause the necessity of its quadrating. D.

Torrington, J. Weightman i K.Johns (2009) have ranked another three situations into the group of inner factors of changes. These following situations are indicative of interferences in organisation's functioning and incipient need of the optimisation in this region:

- 'something' goes wrong – an organisation starts to function worse than it has had, disposal of imperfections and buffering of crisis situation consume too much time,
- at managerial level voices of dissatisfaction start to appear and they are gradually being transformed into projects of specific changes. However, it should be expected that enforced changes will cause resistance of people if people which are being concerned with these changes are not engaged in their preparation,
- the aim of having constantly current market offer.

The thesis that the need of the implementation of the changes often comes from non-effective management (Carr, Hard, Trahant, 1996) had been well documented in the management sciences' works. Loss of profits, staff turnover, growth of operational costs, conflicts and dissatisfaction among crew, reduction of quality of manufactured makings or services, disappointing level of techniques, wear of machinery park, employees' deficient skill level, lack of capital for investment, job performance's fall and small personal involvement of organisation's members in realisation of its goals are considered as inner key determinants. The most important outer factors that cause changes in the organisation come from international and legal environment, economic conditions of a country which the enterprise mainly works in, social and cultural environment that cause the nascence of various trends, technological changes and changes of ownership. The management of change requires defining of methodic proceeding, that is determining of so-called 'path of proceedings'. It as often as not takes the following form: analysis – plan – disposal of idea. The analysis of the starting point and establishment of organisation's ability to change should be every time done. It not only involves effective management of change's individual project but also changes that are realised collaterally or sequentially. Heckmann, Steger and Dowling (2016, p. 778) define this concept as organisation's dynamic ability that let adjust enterprise's abilities to new chances and dangers and also enables to create new abilities. Strategic changes are as often as not implemented in situation when radical modifications occur in the competitive environment of enterprise and it is necessary to adjust to them. They generally disturb not only outer but also inner balance. Strategic management of change requires re-orientation of mission, strategic goals and other essential values of enterprise, change of power's structure, change of decision making system, change of information network system, reorganization in structure, systems and procedures, often also the replacement of part of the employees. The above activities have holistic character. They include with their extent the enterprise or its significant part. Their aim is to nullify and hold back deteriorating of competitive position of enterprise. It usually happens as a consequence of a crisis situation, that is the imbalance with external environment. Adjusting on this significance level for an enterprise should not be randomly done. In such cases it is advised to design and implement the restructuring plan. It should be based on previous diagnostics and analytical works. The enterprise's interactions with an environment should mainly fall within the studying. It facilitates the identification of the areas that need improvement. The most important goal of this process is optimising the usage of enterprise's resources, plateauing enterprise's competitive position in sector it works in, improvement of management and organisation of work. The effect of redefining the strategy is usually to right the inner balance, that is conforming it between structure, procedures functioning in the enterprise and new built mission. When plan of this kind of implementing is being built the following issues should be considered (Burke, 2017):

- goal of business activity, including specific goals – appropriate for every organisation, phrased in strategic and current categories

- functions and processes – relevant to goals' realisation, perceived as often as not by a prism of the main, subsidiary and regulative processes characterized before
- organizational structure – the system of workstations, units and departments with tie-ups settled between them
- resources – team and financial and material means in an enterprise

The goal of business activity determines the programme and diversification of the list of industrial processes. It also influences the choice of technique and employment pattern. Thereunder it affects processes and functions in the organisation.

So the adjustments can be made, the organisation has to be marked by (Judge, Elenkov, 2005):
- a reliable leadership – the management's ability to gain confidence of other employees and lead the way for organisation's members to achieve common goal
- the believers' trust – the employees' ability to constructively resist and also follow a new path advised by leaders
- talented champions – the organisation's ability to attract, upkeep and accredit the leaders of the changes,
- the involvement of middle managers – middle managers' ability to make a stepping stone between the chief management and other employees
- innovative culture – organisations' ability to standarise the innovativeness' norms and encourage to act innovatively
- culture of responsibility – organisation's ability to diligently manage the resources and accomplish the tasks on target
- effective communication – organisation's ability to communicate vertically, horizontally and also with a client
- 'mentality' – organisation's ability to focus on casus' reasons and gained results and recognise such correlations inside and outside the organisation

The so-called 'humanfactor' is the major source of barriers of transforming. This is a reaction and way of perceiving the implemented change by the employees (Carr, Hard, Trahant, 1996). While the necessity of influence and modification of the employees' behaviour to successfully make the alteration can turn out to be the one of the biggest challenge. The changes are individually perceived by people. Some of people perceive changes as the opportunity to develop, others as a risk's source. Line of thought and level of awareness are the sources of this attitude. It structures the individual changes; a perception that is marked out by: conservatism and quest for keeping the environment's status quo; level of sense of stranglehold on your own life; cognitive dissonance that arises when information that person has is different from the state of knowledge and beliefs (Cartwright, Cooper, Jordan, 2006). Individual characteristics as age, education, personality, attitude to work etc. also influence people's attitudes.

3. METHODOLOGY
The results of studies presented in this article are an element of a broader research project. This research was conducted in January of 2018 and concerned 60 representatives of upper and middle management who were also students in the Executive MBA program of the Institute of Economic Sciences at the Polish Academy of Sciences in Warsaw. On account of the relatively small sample size (especially in consideration to women – a total of 18) the study results can be used to identify certain trends or tendencies as well as to formulate hypotheses for further scientific research performed on a more representative group of participants. Study subjects included people having achieved various levels of education but all of their possessed managerial experience had been gained holding high level management positions (an average of 4 years).

Although the site of the study was Warsaw the respondents represented all regions of Poland. The research is based on documented literature relating to the concept of self-awareness or the process of processing information about oneself and one's relationships with the environment. It is assumed that the participating managers possess external self-awareness relating to behaviors, social roles and interpersonal contacts. The aim of the article is to know the managerial staff' opinion about the conditioning of change management in their enterprises. The following research problems have been phrased:

- What type of the changes is the most often made in Polish enterprises?
- Which organisation's stakeholders are the prime movers of the changes?
- What barriers in the effective change management are detected by managers participating in the research?
- How do managers assess their own abilities in the field of change management?

4. ANALYSIS OF THE RESEARCH RESULTS

The recognition of the conditioning of change management requires determination of the areas of Polish enterprises' functioning that are as often as not submitted to changes. The respondents were asked to indicate maximally three such areas (cf. table 1).

Table 1. The areas that are the most often submitted to changes in Polish enterprises
(own work)

The area of changes	Distribution of the answers (N=60) *	
	Number	%
Changes in organisational structure	35	58.3
Changes in employment pattern	29	48.3
Technological changes	27	45
Changes in corporate strategy	22	36.7
Changes in management system	17	28.3
Changes in marketing	11	18.3
Changes in company's product offer	9	15
Changes in logistics	8	13.3
Changes in ways of communicating with the market	7	11.7
Changes in business model	6	10
Changes in organisational culture	6	10

*The data does not aggregate to 100% because respondents could point 3 answers

In the opinion of the managerial staff in the enterprises that they represent changes in organisational structure and connected with them changes in employment pattern are the most often made changes. As many as 45% of the respondents have also indicated technological changes. Changes in business model and organisational culture are the areas of the enterprise which are change the least. It is confirmed by big persistence of these elements of the organisation that is documented in the science (O'Donnell, Boyle, 2008). From the viewpoint of change management the character of changes is important. They can be secondary against the changes in organisation's environment or ahead of changes occurring in the environment. They can be steady or sharp. This data is presented in table 2.

Table 2. The typology of changes in Polish enterprises (own work)

The area of changes	Distribution of the answers (N=60)	
	Number	%
Changes that have adaptable character (they come from the necessity of conforming to changes in the environment, e.g. changes in legal regulations, changes on the market etc.)	27	45
Changes that are the answer to crisis which the organisation land in	13	21,7
Steady changes coming from the idea of continued perfection of the organisation	11	18.3
Sharp changes forestalling the processes occurring in organisation's environment	0	0
All of the mentioned above to the same extent	9	15

The adaptable changes dominate among changes made in Polish enterprises. Their aim is to adjust to changes occurring in the organisation's environment. Relatively large group of the respondents (over 21%) have declared that changes constitute the answer to crisis which the company has landed in. In case of 18% of the enterprises the managers have indicate the changes coming from the philosophy of organisation's perfection. Any of the representatives of the managerial staff has not indicated the changes that forestall the processes occurring in the environment of their workplace. On the other hand relatively large group of the research participants (15%) assess that it is impossible to choose one type of changes because each of the types to the same extent take place in their enterprise. The managers asked about the external sources of changes have enumerated the changes of regulations by law (41.7%), political changes (36.6%) and economic changes (21.7%). High percentage of the choice of politics as the source of changes probably comes from the fact that the managers from the statutory companies were numerously represented among the respondents. The respondents have assessed to what extent the senior management who is in charge of their enterprise get into change management process. The involvement of the highest management had been assessed for 3.7 with the Likert scale. The assessments had relatively big internal diversity (the variance 1.366, the standard deviation 1.2). On this basis it can be presumed that the managerial staff have very diversified experiences in terms of supporting their efforts by superordinates. 25 % of the respondents have stated very big involvement (rating 5). At the same time as many as 23% of the respondents have found the involvement low (rating 2) or very low (rating 1). Simultaneously the management was indicated as the main prime mover of changes in an enterprise (cf. table 3). It arises from the research that the management, the owners and also the middle management are the prime movers of the changes in the Polish enterprises. The clients are important stakeholder that initiates changes. Almost every third participant of the research indicates them. High proportion of the competitors as the ones whose efforts oblige an enterprise to change is also interesting. Relatively small stake in changes' initiating falls for the employees (11.7% of the answers). On the other hand passivity of the frontline managers is even more disturbing. Only 5 % of the respondents indicate them as the source of change.

Table 3. Company's stakeholders as changes' prime movers (own work)

The area of changes	Distribution of the answers (N=60)*	
	Number	%
The management	45	75
The owners	25	41.7
The middle management	18	30
The clients	17	28.3
The competitors	13	21,7
The employees	7	11.7
The recipients	5	8.3
The providers	3	5
The frontline managers	3	5

*The data does not aggregate to 100% because respondents could point 3 answers

The inculcating of change requires a deep conviction of the people who manage this process. This conviction should involve that the process is deliberate, planned and well advised to the people that are involved in this change. Moreover, the incentive to implement the change is closely contingent on the belief that it has positive consequences. The opinions of the managers who took part in the research are showed in table no. 4.

Table 4. The assessment of readiness level and process of change management (scale 1-5)

To what extent the following sentence is true?	Mean	Standard deviation	Variance
The change implemented in my organisation is always well deliberate and planned	2.8	1.03	1.063
All groups of the employees involved in change are informed about changes' reasons and due course before	2.9	1.18	1.39
The managerial staff are well – prepared to minimise the reluctance to changes	2.7	1.22	1.494
The managerial staff are well – prepared to manage a change	2.9	1.33	1.778
A change is always the result of the organisation's real needs	3.5	1.18	1.406
The consultation with the employees is always incidental to the changes	3.02	1.06	1.135
A change is provided sources of finances	3.6	1.04	1.097
The evaluation and assessment of change's effects is made after the implementation of the change	2.9	1.24	1.554

The representatives of the managerial staff participating in the research in large part have assessed the process of change management in their enterprises very critically. The guarantee of funding sources of change is the only criterion for the assessment that got the mean above 3.5. The participants of the research have undervalued the change's preparation as well as the preparation of managerial staff to manage the change, including minimising the employees' reluctance to changes.

They have implicitly indicated their own low competencies in change management because as the managerial staff they should care for instance for change's information policy, consultation with the employees or evaluation of changes' effects. Perhaps such situation's reasons reside in shortage of procedures of change management. This shortage was indicated by nearly 75% of research participants. It comes from the research that managers do not feel personal responsibility for negative situations which they have indicated. They have high self-assessment of change management skills. Nearly 50 % of the respondents have assessed it as good and the next 20% as very good. Only about 7% of the respondents have affirmed that their change management skills are low. On the grounds of this it can be carefully deduced that the mechanism defined by psychologists (Randall et al., 1995, p. 1152–1162) as 'illusory superiority' is quite popular among Polish managers. It appears through individual's proclivity to overestimate his or her skills or qualities against other people, in this case to representatives of his or her own occupational group.

5. CONSLUSION

The research have revealed numerous fields to perfection the change management process in Polish enterprises. Nearly ¾ of companies participating in the research do not have the procedures of change management. Relatively small stake of developmental changes, changes that bring to perfection or changes that are ahead of crisis situations has been ascertained. The adaptable changes that are the answer to changes occurring in the environment or the risk of crisis are in the ascendant. The fact that the employees of the enterprises and junior managers are rarely the changes' prime movers should be assessed negatively. Such situation can indicate low level of organisational involvement of these groups of the employees or the shortage of positive job climate that conduces to the generation of the changes. It can be indirectly gathered that creativity's potential of these groups of organisation's stakeholders is being wasted. The respondents in large part have assessed the information policy that should accompany the change as low. They have indicated the problem that the evaluation of changes' effects does not exist. They have critically rose to factual knowledge of managerial staff in change management sphere. At the same time they perceive themselves as people whose ability of change management is highly developed. The mechanism of 'illusory superiority' applied by the respondents generates the risk of low motivation to develop your competencies in change management and look for the reasons of failures in this outside, e.g. in other people's behaviours.

LITERATURE:

1. Burke W. (2017), *Organization change. Theory&Practise*. Fifth Edition,, SAGE Publications.
2. Cameron E., Green M. (2015), *Making sense of change management: A complete guide to the models, tools and techniques of organizational change*, Kogan Page Publishers, London, Philadelfia, New Delhi.
3. Carr D.K, Hard K.J, Trahant W.J (1996), *Managing the change process: A Field Book for Change Agents, Consultants, Team Leaders and Reengineering*, McGraw Hill Professional, New York.
4. Cartwright S., Cooper C.L, Jordan J. (2006), *Managerial preferences in international merger and acquisition partners. Strategic Change*, John Wiley & Sons.
5. Heckmann N., Steger T., Dowling M. (2016), Organizational capacity for change, change experience and change project performance, *Journal Business Research*, vol. 69, Issue 2, pp. 777-784.

6. Judge W.Q., Elenkov D. (2005), Organizational capacity for change and environmental performance: An empirical assessment of Bulgarian firm, *Journal of Business Research*, vol. 58, pp. 894-895.
7. O'Donnell O., Boyle R. (2008), Understanding and Managing Organisational Culture, Institute of Public Administration, Dublin.
8. Randall C., Block J., Funder D.C. (1995), Overly positive self-evaluations and personality: Negative implications for mental health, *Journal of Personality and Social Psychology*, 68 (6) pp. 1152–1162.
9. Torrington D., Weightman J. (2009), Johns K., *Effective Management. People and Organisation*, Prentice Hall, New York.

TOURISM INDUSTRY AND PROSPECTS OF DEVELOPMENT OF THE GEORGIAN LABOR MARKET

Maia Diakonidze
PhD in Economics
Akaki Tsereteli State University, Georgia
maia.diakonidze@atsu.edu.ge

ABSTRACT
One of the main problems of the economy of all countries is the employment of the population and, therefore, the balance of labor in the labor market on the basis of labor supply and demand balancing. In Georgia as in the whole world there is a tendency of reducing the number of employed people and growing self-employed. As much as the demand for labor is derived from the demand for goods and services, which are created from this labor, it is recommended to determine the economic sector / industries, which are growing at a rapid tendency to stand out and who, therefore, can contribute to the employment problem. Because of this, we focused on the relatively new and one of the fastest growing sectors of the economy - the Tourism Industry. Based on the experience and statistical data in the country, using the method of extrapolation, we carried out research on evaluation of the influence development of tourism industry on the important economic indicators (forecast) for 2020. By 2020 the effectiveness of tourism industry will increase at least 8,6% on employment. The direct share of the tourism industry in Georgia's gross domestic product it is expected that this indicator will increase and reach 9,7% by 2020. Therefore, we consider it necessary to promote development of the sector and take more intensive steps in this direction. The tourism industry is the field of economic activity that is vital for the modern stage of the national economy.
Keywords: Employment 1, Labor market 2, Tourism Industry 3

1. INTRODUCTION

The problems on the labor market are primarily expressed in the quantitative and / or structural imbalance between labor demand and delivery, during which the supply of labor prevails or does not correspond to the requirement for the reduction of employment, which is reflected in the reduction of employment levels and the growth of unemployment. One of the main problems of the economy of all countries is the employment of the population and, therefore, the balance of labor in the labor market on the basis of labor supply and demand balancing [1]. In Georgia as in the whole world there is a tendency of reducing the number of employed people and growing self-employed. A significant number of self-employed are mainly concentrated in agriculture, whose share is low in Gross Domestic Product and it is only 9%, while unemployment rates vary within 12-16%. Besides, there is the not only quantitative but also important structural (professions and qualifications) imbalance between the demand and supply of the labor on the labor market. This circumstance significantly hinders the efficient functioning of the labor market and negatively impacts on economic activity, which, in turn, is a necessary precondition for the country's development and employment [7]. In order to achieve the rising level of employment and achieve efficient functioning of the labor market, it is necessary to create a framework of economics through the utmost rational utilization of existing resources in the country to ensure the involvement of working people in labor. As much as the demand for labor is derived from the demand for goods and services, which are created from this labor, it is recommended to determine the economic sector / industries, which are growing at a rapid tendency to stand out and who, therefore, can contribute to the employment problem. Based on this, we focused on the relatively new and one of the fastest growing sectors of the economy - the Tourism Industry.

Tourism occupies a central place in the tourism industry itself, the development of the tourism industry is derived from tourism and tourism services. The International Tourism Organization predicts that by 2020 the number of tourists will reach 1.6 billion, almost triple, while international tourist trips will increase revenue from 399 billion to 2 trillion dollars a year, almost 5 times more. Development of the tourism industry contributes to the growth of tourists, the number of employment and a positive impact on the functioning of the labor market. In many countries, the tourism industry produces the majority of GDP. For example, the direct contribution of the tourism industry in Spain's gross domestic product is 16%; Italy - 10.3%; Morocco - 17.3%; France - 9.3%; Norway-9,1%; Turkey - 12.6%; Great Britain - 11.3%, and the other. Accordingly, a significant proportion of employed in the tourism industry. One of the significant features of the functioning of International tourism is employment growth, since tourism, as a sector of the economy, is based on a wide application of human resources. Accordingly, Countries whose economies have a significantly larger share of ruturism, the number of employees, directly according to the number of tourists. For example, in Europe, where the number of people engaged in tourism in 2015 was 14,229,000 people, in general, 3.6% of employees. 2016 the first quarter, according to European data, the number of visitors increased by 3.4% compared to the previous year, and then by the number of employees as the 1.8% growth in 2016 and the tourism industry in the number of employees was 14 492 000 people. In view of the foregoing, it can be concluded that the role of the tourism industry is positive on the solution of market problems related to labor [4]. Tourism is a precondition for the development of tourism industry. Consequently, it is important to understand the correct meaning of its contents. Tourism is socio-economic and cultural phenomenon, which involves the movement of people between countries or within the country, relaxing free time or business purposes. It is a relatively new area of economic activity and has an approximately one-century history of organized activities. Tourism is an integral part of modern lifestyle, and the interest of the population towards tourism services is increasing, which makes tourism service more popular and economically important. The uniqueness of the tourist industry lies in its technical-economic specification. This means that different industries of the industry can not be united under one type of production and have a form of a single enterprise. That is why tourism industry should be considered as a unified system that promotes tourism services within the tourism industry. Tourist business is actively developing on the base of the tourism industry. The tourism business itself is a field that uses the services of individual sectors of the tourism industry to produce such a tourism product that is focused on customer satisfaction. Tourism, as a field of activity, has an industrial form and includes a wide variety of sectors that are closely related to each other. The tourism industry - is an industrial complex that combines different areas of tourism development and the purpose of creating travel and leisure conditions. That is, the tourism industry is carrying out a tourism product that is demanded both in local and in the external markets. Tourism is the basis for the development of tourism industry. Besides, the tourism influence on the tourism industry is the service of tourism service that creates the tourism industry in the field of material production. The tourism industry as a combination of material and intangible production related to tourism services affects certain segments of the labor market and encourages employment growth in these segments (Scheme).

Figure following on the next page

Figure 1: The impact of the tourism industry on the labor market
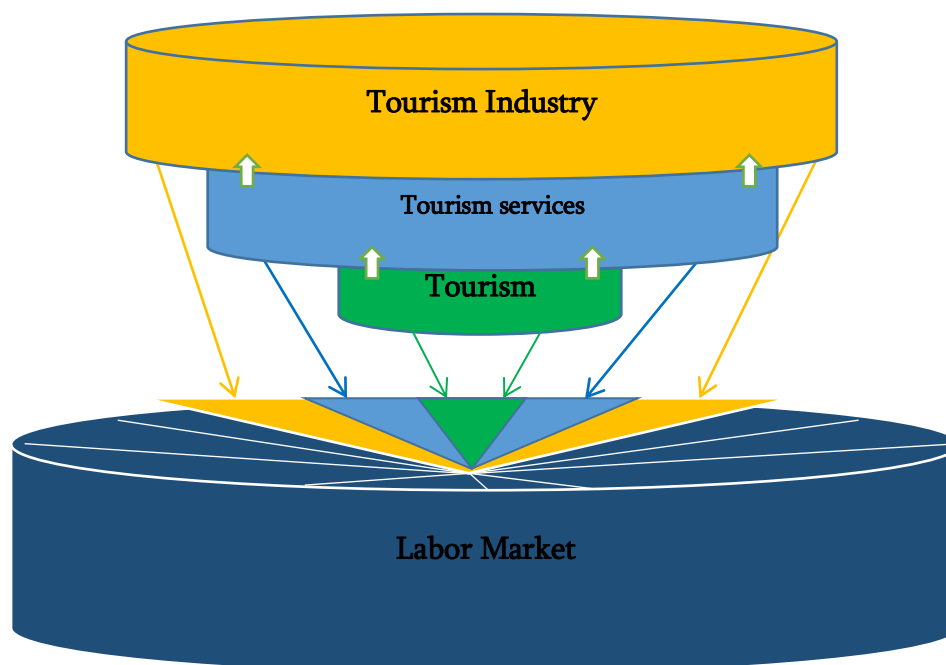
On the labor market and, first of all, the employment of the tourism industry is based on quantitative approach based on the employment of the tourism industry directly to the employment segments and indirect (employment) segments. Direct (primary) employment is directly related to tourism industry, tourism reception, hospitality, vacation and travel. Direct employment in the field of tourism industry involves employment in hotels, tour agencies, tour operators, employment in public tourism organizations and resorts. Indirect employment (secondary) of the tourism industry is characterized by the sectors of the economy that are not directly related to tourism, but they arise from the requirements of tourism services. The indirect form of employment in the tourism industry involves employment in such sectors as trade, construction, agriculture and others. A qualitative approach to employment in the tourism industry is based on a number of peculiarities. These are the main moments:

- The diversity of tourism species, which enables employers with different qualifications and capabilities to work as primary and secondary markets of labor;
- Impossible to automate tourism directions;
- Changing demand for workforce;
- Temporary and incomplete working schedule;
- The ability to attract low-paid staff and high engagement of young people;
- The possibility of parallel work (combined employment);
- Growing demand for female gender worker;
- The possibility of illegal employment;
- Labor maneuvering.

The specifics of employment in the tourism industry are mainly linked to seasonal seasons, which create a prerequisite for unequal distribution of working hours. The connection between the number of employment and the tourism season is direct, as the seasonal season can be defined as tourism, as tourists are most likely to use some of the tourist resorts and, therefore, the concentration of tourist flows in the resort-tourist places. The seasonal implies the use of specific tourist resources at different times of the year. For example, summer - sea, winter - ski resorts, etc.) demand increases on work force, and in the non-season period, due to the seasonal

nature of the job, the share of employment for the semi-worker is increased or, in some cases, the risk of staying without service. In the sustainable, strategic development of the tourism industry focused on the production of innovative, exclusive and continuous renewable tourism products, the number of workplaces may be maintained throughout the year. Since sustainable development of tourism is aimed at reducing economic risks associated with seasonality and provides economic stability, including stable employment. In Georgia, as well as in its neighboring countries, the employment of the population remains an acute economic problem. Therefore, any way to solve this problem is important. Against the background of employment existence in Georgia and the country possesses unique tourism resources, it is expedient to activate the work to facilitate the development of the sector. As the changes in the tourism industry have a direct proportionate effect on economically important indicators. Georgia is a country in the Caucasus region of Eurasia. Located at the crossroads of Western Asia and Eastern Europe, it is bounded to the west by the Black Sea, to the north by Russia, to the south by Turkey and Armenia, and to the southeast by Azerbaijan. The capital and largest city is Tbilisi. Georgia covers a territory of 69,700 square kilometres, and its 2017 population is about 3.718 million. Georgia is a unitary semi-presidential republic, with the government elected through a representative democracy. According to the government, there are 103 resorts in different climatic zones in Georgia. Tourist attractions include more than 2,000 mineral springs, over 12,000 historical and cultural monuments, four of which are recognised as UNESCO World Heritage Sites (Bagrati Cathedral in Kutaisi and Gelati Monastery, historical monuments of Mtskheta, and Upper Svaneti) [7]. The total number of tourists in 2014 was 5 515 559, by 2015, the same figure increased to 5 901 094, which was directly reflected on the employment index. Direct share of tourism in 2014 constituted 5.1% of total employment, and in 2015 the growth rate of tourists increased to 5,8%. Therefore, the tourism industry can play an important role in stimulating economic growth, reducing regional asymmetry, creating jobs and positive external factors that affect other economic indicators (directly or indirectly) [7]. Based on the experience and statistical data in the country, using the method of extrapolation, we carried out research on evaluation of the influence development of tourism industry on the important economic indicators (forecast) for 2020. As a result of the projections revealed that employment growth by the development of tourism industry by 2020 the effectiveness of tourism industry will increase at least 8,6% on employment (Diagram 1) [2]:

Diagram 1: The share of tourism industry in employment growth rate (2017 and 2020)
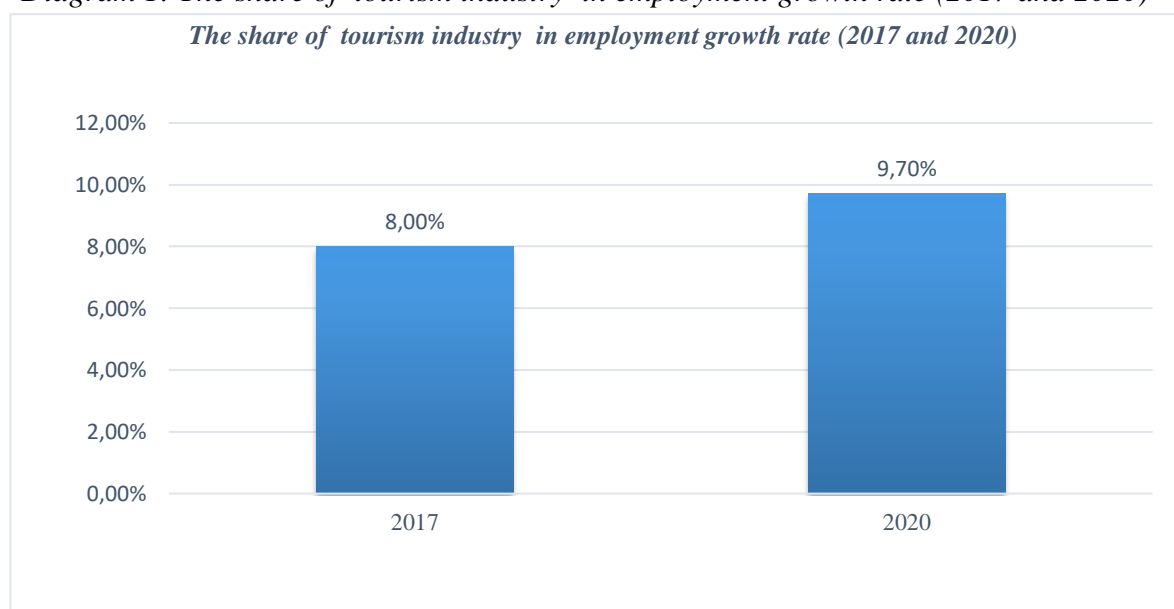
The direct share of the tourism industry in Georgia's gross domestic product by 2016 was 7,3%, and based on our forecast it is expected that this indicator will increase and reach 9,7% by 2020. (Diagram 2):

Diagram 2: The share of tourism industry in GDP (%) (2017 and 2020)

The share of tourism industry in GDP (%) (2017 and 2020)
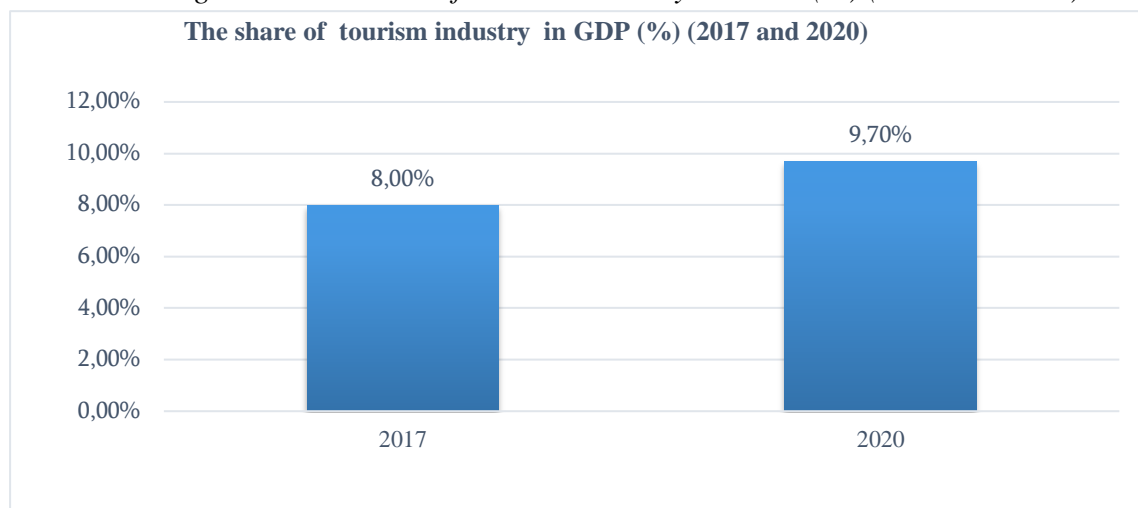
 As for the country's decline in tourists, according to 2016 data, 6 million people traveled to Georgia for tourism purposes. 2017 This number has increased to about 7,2 million, and we have taken into consideration the factors that exist: a) the world positive trend of tourism travels,; B) Annual increase in demand for tourism product; C) State policy for tourism development, etc. We have also used the above mentioned approach and as a result, we have predicted in 2020, the expectation will go up to 10 million. Thus, by 2017, income was exceed 2 billion GEL from tourism. Taking into consideration all the above considerations and researches, we can say that the tourism industry is an instrument that can have a significant positive effect on the economic problems faced by the state like employment and GDP growth. Georgia is distinguished by the development of tourism industry. Therefore, we consider it necessary to promote development of the sector and take more intensive steps in this direction. The tourism industry is the field of economic activity that is vital for the modern stage of the national economy.

2. CONCLUSIONS AND PROPOSALS
The work of the paper gives us the following theoretical or practical conclusions:
- Tourism industry is a special technical-economic system that specifies that various fields of production within it can not be united under one type of production and have a form of a single enterprise. Therefore, the tourism industry should be considered as a unified system that creates tourism services with the participation of material and non-material spheres within the tourism industry;
- In order to facilitate the development of tourism, there must be a need sharply expressed state-economic policy that will enable private and public sector to determine priorities and plan future work plans;
- In establishing tourism policy in Georgia it is desirable to institute of the sector institutionalisation - to implement a legislative-normative and administrative-hierarchical and functional regulation of the sector;
- Since there is no uniform opinion on the concepts and categories reflecting the role of the state in the development of tourism, it is important to correctly define the priorities and function of the state of tourism regulation;

- It is important to establish a state tourism policy that defines the terms and conditions of economic development of the tourism industry. It is necessary to realize economic, social and institutional approaches;
- The main precondition for tourism activities is the introduction of regulation and control mechanisms to prevent the chaotic of the sector and bypassing the state budget;
- The tourism industry is a socio-economic phenomenon that can solve many economic problems faced by the country and its functioning is maintained in parallel with maintaining national identity, which is so important in globalization.

LITERATURE:
1. Arnania-Kepuladze T. Once again about the essence of the work force. Tbilisi, Zh. "economic". N9-10. 2004, pp. 31-38;
2. Bakuradze a. Virsaladze N., Theory of Statistics, Auxiliary Manual, Kutaisi 2014;
3. Deutscher Reiseverband, The important contribution of tourism, Development policy and the impact on sustainable, infrastructure, jobs and social development, sep. 2015;
4. Eurosurveillance, International Travel and acquisition of Multidrug-Resistant Enterobacteriaceae , Volume 20, Issue 47, 26 November 2015;
5. Economic characteristics of the tourism sector, The Economics of Tourism Destinations, Vanhove-01,2004;
6. Further Eurostat information, Tourism industries prove resilient to the economic crisis and provide jobs for women and young people, 2015;
7. Georgian National Tourism Administration, Tourism Statistical Report of the third quarter 2016;
8. Jeffrey Dorfman, The Unemployment Rate Does Not Measure Labor Market Strength, Forbes, USA, 2015;
9. Jim Stanford, How-To Guide: Labor Market and Unemployment Statistics, Canadian Centre for Policy Alternatives, 2008;
10. Schubert S. The effects of total factor productivity and export shocks on a small open economy with unemployment, Journal of Economic Dynamics and Control, Vol. 35, pp. 1514-1530, 2011;
11. Schubert S. Brida G., Macroeconomic effects of changes in tourism demand: a simple dynamic model, Tourism Economics, Vol. 15, pp. 591-613, 2009;
12. Tsartsidze M., Peculiarities of Formation of National Labor Market in Georgia, Collection of Works of Academy of Economic Sciences of Georgia, Volume 5, Publishing Company "News", Tbilisi 2005;

RESPONSES OF DISCONTENT EMPLOYEES

Maria Piotrowska
Wroclaw University of Economics, Poland
maria.piotrowska@ue.wroc.pl

ABSTRACT

The paper is focused on an analysis of four responses to job discontent. Job discontent is defined as a motivator which is necessary to make progress in a professional career. Discontent employees can leave their organizations or to stay with them accomplishing additional tasks aimed at raising qualification or enhancing promotion, or job crafting, or they can choose a neglect option. Therefore, a model used in the paper is called Exit-Rush-Craft-Neglect, or the ERCN model. The research is aimed to determine how important the particular aspects of job are in explaining the responses of discontent employees. The analysis includes age groups. A source of data is a questionnaire survey carried out in Poland in November of 2016. Considering the intercorrelations among the job aspects and a large number of aspects the relative weight analysis is applied to establish the contribution of a particular job aspect to explaining a given response of job discontent . The findings reveal that employability is the most powerful motivator when employees respond to job discontent. The problem of overqualification induces the older to exit. Job crafting is chosen mostly by employees in the middle age when they perceive themselves independent and responsible. The age groups of employees are motivated to the neglect response by different job aspects – the young by unfairness at their work places, while older by the possibility to work at home. The results confirm the hypothesis that there are age differences in explaining the effects of the job aspects on the job discontent responses.
Keywords: *craft, discontent, exit, job, neglect*

1. INTRODUCTION

Recently in Poland the job market has become favorable to job seekers. Employees have more options to respond to job discontent. Employability induces them not only to leave their organizations to seek new more attractive jobs but also to stay with organizations which offer more possibilities to raise qualification and to be promoted. It is important to identify job aspects which are used by employees when they choose their responses to job discontent. The paper addresses these issues. The paper covers fifth sections. The theoretical and empirical literature is presented in the second chapter; the research design is described in the third chapter, while the findings are discussed in the fourth one. Finally, the conclusions summarize a discussion.

2. THEORETICAL AND EMPIRICAL LITERATURE

Hirshman (1970) developed a concept of exit, voice and loyalty, or EVL model, which addresses how members of organizations, including employees, perceive their wrongdoings before decline and failure. They will have two possible responses to organizational decline: exit or voice, and loyalty can have an effect on both responses. According to the EVL exit is defined as a withdrawal of membership from an organization, while voice as an attempt to improve the workplace through communication or proposal for change (Hirshaman, 1970). Loyalty is defined as private support to organization and it is seen as a more passive reaction in which employees stay with an organization, waiting for conditions to improve (Farrel and Rusbult, 1992). Porter and Steers (1973) suggested the four general categories in the organization stimulating exit: organization-wide (e.g., pay and promotion policies), immediate work group (e.g., unit size, supervisor, and co-worker relations), job content (e.g., nature of requirements),

and person-based (e.g., age and tenure). Mobley et al. (1979) introduced to the conceptual model the main effects of satisfaction, the attraction and expected utility of the present job and the attraction and expected utility of any alternatives. Hirshman (1970, p. 30) defined voice as "any attempt at all to change, rather than to escape from an objectionable state of affairs". Farndale et al. (2011) suggests that voice is closely linked to organizational commitment when positive relationships exist between employees and supervisors. According to the EVL model exit and voice are moderated by an employee's loyalty. There is controversy among researchers on the concept of loyalty. Some have accepted Hirshman approach and they have seen loyalty as an attitude while others have interpreted it as a behavioral response (Saunders, 1992). Barry (1974) argues that voice is built into the concept of loyalty, which requires non-exit as a means to exercise voice. The most important innovation to the EVL model was introduced by Farrell (1983), who included the concept of neglect described as a lax and disregardful behavior among employees. In the expanded Farell model, called Exit-Voice-Loyalty-Neglect (EVLN) exit and neglect are destructive reactions while voice and loyalty are constructive ones; exit and voice are active responses while neglect and loyalty are passive reactions. Farell and Rusbult (1992) defined constructive reactions as attempts to maintain or revive satisfactory working conditions versus destructive reactions which can worsen organization relationships. Farell and Rusbult (1992) used the EVLN model to examine the effects of job satisfaction, investment size, and quality of alternatives on each of the four concepts: exit, voice, loyalty and neglect. Their findings revealed that high overall job satisfaction fostered constructive voice and loyalty reactions and decline destructive exit and neglect responses, that high levels of investment promoted voice and loyalty reactions and inhibited exit and neglect, and that high quality alternatives encouraged active exit and voice responses and it is less likely to neglect (no evident relationship between the quality of alternatives and the response of loyalty). The results suggested any gender gap. They predicted that men engaged in voice when investment and satisfaction were high, while women engaged in voice not only under the same circumstances but also when investment and satisfaction were low and women had nothing to lose. Withey and Cooper (1989), testing the EVLN model, used three predictor variables : the cost of the action (voice costs and exit costs), the efficacy of the action (prior satisfaction, possibility of improvement and locus of control) and the attractiveness of the setting in which the action occurs (commitment and alternatives). The finding from this research show that economic costs of exit increase loyalty and neglect, and reduce exit, while psychological costs not only decline exit but also reduce loyalty and neglect. Moreover, the results suggest possible sequences of behaviors which point at relationships between the four responses in the EVLN model. Berntson et al. (2010) expanded the set of determinants, including employability (i.e. an individual's perception of viability in the labor market). Their findings indicate that employees who experience high employability show a higher intention to exit, less use of voice, and lower level of loyalty. The detailed description of theoretical foundations and empirical results linked with the EVL and EVLN models can be found in the excellent literature survey prepared by Vangel (2011).

3. RESEARCH DESIGN
3.1. Definitions, purpose and hypothesis
If employees are asked to evaluate their jobs in terms of the job being bad or good for them using the 5 point scale, from very bad to very good, whose who are content with their jobs give the marks 4 or 5, while discontent employees choose one of the marks 1, 2 or 3. Discontent job does not mean the exactly the same like job dissatisfaction, through both concepts are highly correlated (in the research the correlation is equal to 0,84). There are two common definitions which describe job satisfaction as: 'the pleasurable emotional state resulting from the appraisal of one's job as achieving or facilitating the a of one's job values" (Locke 1976, p.1342), and

"the extent to which people like (satisfaction) or dislike (dissatisfaction) their jobs" (Spector, 1976, p.2). Job discontent is defined in the paper as the feeling which is the necessary for progress on the path of professional career; it is the stimulus to want to grow. Job discontent, therefore, is a motivator rather than destructive power and it results in active responses intended to benefit self. Destructive response, like neglect, can arise only in specific circumstances. Discontent employees can choose among the following decisions:

- exit (overall turnover intentions) - seeking a new job to leave the organization
- exit postponed - accomplishing new tasks to raise qualifications and to leave
- rush ahead - accomplishing new tasks to enhance promotion
- job crafting - focusing on improving such aspects of the job which give more satisfaction,
- neglect - performing tasks with the possibly smallest work engagement

These responses to job discontent are influenced by several aspects of a job, like: Person - Environment fit, feeling of relative deprivation, fairness at the workplace, job elasticity, job location, earnings, and career promotion. A model used in the paper is called Exit-Rush-Craft-Neglect, or the ERCN model. The research is aimed to determine how important the particular aspects of job are in explaining the responses of discontent employees. The analysis is focused on age groups. There is little study on how job discontent is experienced by different employee groups. The empirical research have shown that older employees are less likely to leave their jobs and display lower levels of counterproductive behaviors, and higher levels of citizenship behaviors. The research hypothesis states that there are age differences in explaining the effects of the job aspects on the job discontent responses.

3.2. Data
A source of data is a questionnaire survey carried out in Poland in November of 2016. Respondents were in 25-45 age, or in the mobile working age. They have attained a tertiary educational level. In November of 2016 interviews were carried out with respondents using CAPI method, on a nationwide, random-quota sample with a conscious choice of the respondent. All items in the survey were developed for the purpose of the research project on economic resourcefulness of Polish families (the project financed by the National Centre for Science). The sample of respondents used in is divided into three groups of employees: 1) the younger - in the age of 25-31; 2) in the middle age – 32-38; 3) the older - in the age of 39-45. The discontent employees are identified as respondents whose perceived their jobs as being very bad (1), bad (2) and neither bad nor good (3) on the 5 point scale. A number of the discontent employees in the first group was 81 (30% of 272), in the second group 82 (30% of 271, and in the third group 71 (25% of 283).

3.3. Method
Considering the intercorrelations among the job aspects (predictors) and a large number of aspects (measured by 26 items) the relative weight analysis is applied to establish the contribution of a particular job aspect to explaining a given response of job discontent . The "relative weight" of each predictor (a job aspect) refers to the proportionate contribution each predictor makes to R^2, taking into account both the predictor's unique effect and its effect when combined with other variables. Rescaled weights (scaled as a percentage of predictable variance) for every predictor in the model was developed by LeBreton and Tonidandel (2008). The approach allows to estimate the statistical significance of the relative weights.

3.4. Measuring
In the regressions used in the relative weight analysis the discontent job responses are dependent variables, while the items measuring job aspects are independent variables.

Each of responses is regressed on a set of the job aspects. A full list of independent variables used in the research is presented in Tables 1 and the particular dependent variables in Tables 1-5, in section 4 when the findings are discussed. The items on the job discontent responses as well as the job aspects employees use when they make decision which of the job discontent responses to choose are scaled from 1 to 5, where 1 is the lowest mark and 5 the highest.

4. FINDINGS

The high-skilled employees take into account different aspect of jobs when they consider to leave their jobs (see Table 1, the rescaled relative weights statistically significant). The young (25-31) are motivated mostly by employability as well by too small promotion possibility and too low salaries, and when they have their career plans, and working hours are not fitted their desires. Those in the middle age (32-38) are pushed to seek a new more attractive jobs as they perceive large employability and when they are discontent with the job elasticity as well as with the particular contributions to overall workload among their teams. The older (39-45), in turn, want to leave their jobs when they feel overqualificated it means they perceive their skills and professional experiences higher than skills and experiences of the others in the teams and their knowledge and skills do not fit their positions.

Table following on the next page

Table 1: Rescaled relative weights in the regressions of exit on the items measuring the job aspects by age groups (own calculation based on the software developed by S. Tonidandel and J.M. Breton http://relativeimportance.davidson.edu/ a)

Dependent variable- **exit - overall turnover intention**: If you are discontent with your current job, please, evaluate to what degree your response matches the following behavior (scale 1…5): You try to find a better job (exit: overall turnover intentions)				
Aspects of jobs	Items: To what degree do you agree with the following statement (scale 1…5)	Rescaled relative weight as percentage of R^2		
		Age: 25-31	Age: 32-38	Age: 39-45
Person-Job fit	Knowledge and skills meet the requirements of the position	0.5	4.1	18.2**
	Meeting expectation on raising qualification	2.8	1.6	1.0
	Meeting expectation on autonomy and responsibility	2.3	3.6	1.4
	Opportunity to focus on your career	7.9**	1.0	2.8
	Capabilities to do what you like to do	2.2	1.1	1.3
Person-Organization fit	The proper additional benefits provided	0.8	1.6	1.4
Person-Group fit	Your co-workers and you are satisfied with the workload	1.5	9.7**	3.3
	Your co-workers and you agree how to compete with other groups	1.3	4.7	2.0
	Your work experience definitely higher than experience of your co-workers	5.7	4.2	27.0**
Person-Supervisor fit	The match between your supervisor's leadership style and the leadership style you desire	5.0	0.8	1.8
Relative deprivation	Comparison in working condition (you and your university mates)	1.0	1.1	1.5
	Relative wealth (you versus residents of the area)	0.6	5.6	1.7
Fairness at workplace	Your co-workers have better possibilities to demonstrate their skills then you	2.1	4.9	2.2
	Considering the workload by accomplishing assigned tasks – your co-workers get higher earnings (including benefits) - distributive justice	2.1	1.6	1.7
	Direct relationship between qualifications and promotions – procedural justice	5.3	1.7	1.6
	Supervisors treat you with the same respect like the others–interpersonal justice	3.0	1.8	0.7
Labor market outcomes	Earnings satisfaction	8.7*	1.4	6.3
	Opportunity to be promoted during the next year	1.6	3.7	1.1
Employability	Possibility of finding a better job	21.9**	13.6**	1.2
Workplace location	The workplace location and commuting to work	2.1	0.7	2.6
Job elasticity	Possibility to obtain a day-off when needed	1.6	1.3	4.0
	The possibility of home office	3.0	4.6	3.2
	The possibility of flexible working hours	5.6**	15.8**	2.9
Training	The high quality training provided	4.4	3.2	1.9
Career plan	Having a career plan	6.1**	2.4	3.1
Control	Gender	0.7	4.8	3.9
R^2		0.48 (100%)	0.46 (100%)	0.58 (100%)

Regressions estimated on the data from survey carried out in Poland in November of 2016. Gender as a control. Rescaled relative weights reported in the table
*** Denotes a relative weight significantly different from zero at the 1% level
** Denotes a relative weight significantly different from zero at the 5% level
* Denotes a relative weight significantly different from zero at the 10% level

Table 2 presents the findings on the exit-postponed option. The discontent young employees (25-31) decide to postpone the exit and to improve their qualifications in the current job mostly when they have the career plan as well as when they satisfied with distributive justice. The employees in the middle age (32-38) choose the exit-postponed option when they see the opportunity to focus on their career and they are happy with the additional benefit package. The older (39-45) are encouraged to stay temporarily with organizations as they satisfied with earnings; they perceive small employability while their skills are higher than co-workers. In general, the job aspects (except employability) are statistically significant only at 1%, so the results only suggest possible relationships.

Table 2: Rescaled relative weights in the regressions of exit-postponed on the items measuring the job aspects by age groups (own calculation based on the software developed by S. Tonidandel and J.M. Breton http://relativeimportance.davidson.edu/ a)

Dependent variable- **exit-postponed**: If you are discontent with your current job, please, evaluate to what degree your response matches the following behavior (scale 1…5): You want to raise their qualifications and leave the job				
Aspects of jobs	Items: To what degree do you agree with the following statement (scale 1…5)	Rescaled relative weight as percentage of R^2 (only weights statistically significant)		
Person-Job fit		Age: 25-31	Age: 32-38	Age: 39-45
	Opportunity to focus on your career		8.9*	
Person-Organization fit	The proper additional benefits provided		8.7*	
Person-Group fit	Your work experience definitely higher than experience of your co-workers			16.2*
Fairness at workplace	Considering the workload by accomplishing assigned tasks – your co-workers get higher earnings (including benefits) - distributive justice	9.9*		
Labor market outcomes	Earnings satisfaction			11.3*
Employability	Possibility of finding a better job			27.4**
Career plan	Having a career plan	16.3*		
Control	Gender		10.7*	

See Table 1

The rush ahead option (accomplishing new tasks to enhance promotion) – see Table 3 - is chosen by the young (25-31) when there is an agreement among their teams how to compete with other groups and their organizations provide them with high quality training. Employees in the middle age (32-38) decide to accomplish new task when they have the opportunity to be promoted the next year and they are satisfied with the job elasticity. The older (39-45) are encouraged to choose the rush ahead option when they evaluate employability for them poorly.

Table 3: Rescaled relative weights in the regressions of rush ahead on the items measuring the job aspects by age groups (own calculation based on the software developed by S. Tonidandel and J.M. Breton http://relativeimportance.davidson.edu/ a)

Dependent variable- **rush ahead**: If you are discontent with your current job, please, evaluate to what degree your response matches the following behavior (scale 1…5): You accomplish new tasks to enhance promotion				
Aspects of jobs	Items: To what degree do you agree with the following statement (scale 1…5)	Rescaled relative weight as percentage of R^2 (only weights statistically significant)		
		Age: 25-31	Age: 32-38	Age: 39-45
Person-Group fit	Your co-workers and you agree how to compete with other groups	14.7**		
Labor market outcomes	Opportunity to be promoted during the next year		19.9*	
Employability	Possibility of finding a better job			23.3**
Job elasticity	The possibility of flexible working hours		14.3*	
Training	The high quality training provided	12.1**		

See Table 1

Mainly employees in the middle age (32-38) are interested in job crafting. They are motivated to do it by many job aspects (see Table 4) but they have to be satisfied with their independence and responsibility. They expect to be promoted during next year as procedural justice in their organizations exists.

Table following on the next page

Table 4: Rescaled relative weights in the regressions of job crafting on the items measuring the job aspects by age groups (own calculation based on the software developed by S. Tonidandel and J.M. Breton http://relativeimportance.davidson.edu/ a)

Dependent variable- **job crafting**: If you are discontent with your current job, please, evaluate to what degree your response matches the following behavior (scale 1…5): You are focused on improving such aspects of the job which give more satisfaction				
Aspects of jobs	Items: To what degree do you agree with the following statement (scale 1…5)	Rescaled relative weight as percentage of R^2 (only weights statistically significant)		
		Age: 25-31	Age: 32-38	Age: 39-45
Person-Job fit	Meeting expectation on autonomy and responsibility		22.9**	
	Opportunity to focus on your career		5.9**	
Peron Group fit	Your work experience definitely higher than experience of your co-workers		7.4**	
Fairness at workplace	Considering the workload by accomplishing assigned tasks – your co-workers get higher earnings (including benefits) - distributive justice	9**	9.0**	
	Direct relationship between qualifications and promotions – procedural justice	12.6**	6.3**	
Labor market outcomes	Earnings satisfaction		12.5**	
	Opportunity to be promoted during the next year		7.3**	
Employability	Possibility of finding a better job	9.8*		21.2**
Job elasticity	The possibility of home office		4.8**	
	The possibility of flexible working hours		4.3**	

See Table 1

Job discontent leads to neglect among the young when cooperation in their teams works badly and when they experience procedural and interpersonal unfairness (see Table 5). The employees in the middle age perform tasks with possibly smallest engagement when their expectations on promotions are not met and when they do not have opportunity to demonstrate their skills, while the older (39-45) discontent with their earnings are encouraged to neglect by the possibility to work at home.

Table following on the next page

*Table 5: Rescaled relative weights in the regressions of **neglect** on the items measuring the job aspects by age groups (own calculation based on the software developed by S. Tonidandel and J.M. Breton http://relativeimportance.davidson.edu/ a)*

Dependent variable- **neglect**: If you are discontent with your current job, please, evaluate to what degree your response matches the following behavior (scale 1…5): You perform tasks with the possibly smallest engagement				
Aspects of jobs	Items: To what degree do you agree with the following statement (scale 1…5)	Rescaled relative weight as percentage of R^2 (only weights statistically significant)		
		Age: 25-31	Age: 32-38	Age: 39-45
Person-Job fit	Opportunity to focus on your career		10.9*	
Person-Group fit	Your co-workers and you are satisfied with the workload	11.4**		
Fairness at workplace	Your co-workers have better possibilities to demonstrate their skills then you		10.7*	
	Direct relationship between qualifications and promotions – procedural justice	11.1**		
	Supervisors treat you with the same respect like the others–interpersonal justice	11.7**		
Labor market outcomes	Earnings satisfaction			9.1*
Job elasticity	Possibility to obtain a day-off when needed		9.1*	
	The possibility of home office			18.1**

See Table 1

5. CONCLUSION

Employability is the most powerful motivator when employees respond to job discontent. When the young (25-31) and in the middle age (32-38) perceive many possibilities to find a new job they leave their organizations, especially the young as they have the plan of their careers . While small employability encourage the older (39-45) to stay with their organizations and to accomplish additional tasks aimed at raising their qualification or enhancing promotions, or job crafting. The problem of overqualification induces the older (39-45) to exit. Job crafting is chosen mostly by employees in the middle age (32-38) when they perceive themselves independent and responsible. The young decide to craft when they experience distributive and procedural justice. The age groups of employees are motivated to the neglect response by different job aspects – the young (25-31) by unfairness at their work places, while older (39-45) by the possibility to work at home. The employees in the middle age are stimulated by a lack of promotion possibility and a lack of possibility to demonstrate their skills, however, these effects are significant only at 10%. The findings verify the hypothesis that there are age differences in explaining the effects of the job aspects on the job discontent responses.

LITERATURE:
1. Barry, B.(1970). Review Article: Exit, Voice, and Loyalty. *British Journal of Political Science*, 1, 79-107.
2. Farndale, E., Van Ruiten, J., Kelliher, C., & HopeHailey, V. (2011). The influence of perceived employee voice on organizational commitment: An exchange perspective. *Human Resource Management*, 50, 113129.
3. Farrell, D. (1983). Exit, Voice, Loyalty, and Neglect as Responses to Job Dissatisfaction: A Multidimensional Scaling Study. *The Academy of Management Journal*, 26, 596-607.
4. Farrell, D.; & Rusbult, C.E. (1992) Exploring the Exit, Voice, Loyalty, and Neglect Typology: The Influences of Job Satisfaction, Quality of Alternatives, and Investment Size. *Employee Responsibilities and Rights Journal*, 5, 201-218
5. Hirschman, A.O. (1970). *Exit, Voice, and Loyalty: Responses to Decline in Firms, Organizations, and States*. Cambridge, MA: Harvard University Press.
6. Kalyal, H., Berntson, E., Baraldi, S., Näswall, K. & Sverke, M. (2010). The moderating role of employability on the relationship between job insecurity and commitment to change. *Economic and Industrial Democracy*, 31(3), 327-344.
7. LeBreton M., and Tonidandel, S. (2008). Multivariate relative importance: Extending relative weight analysis to multivariate criterion spaces. *Journal of Applied Psychology*, 93, 329-45
8. Locke, E.A. (1976) *The Nature and Causes of Job Satisfaction*. In M.D. Dunnette (ed.), Handbook of Industrial and Organizational Psychology. Chicago: Rand-McNally.
9. Mobley, W.H.; Griffeth, R.W.; Hand, H.H.; & Meglino, B.M. (1979) Review and Conceptual Analysis of the Employee Turnover Process. *Psychological Bulletin*, 86, 493-522.
10. Porter, L.W; & Steers, R.W. (1973). Organizational, Work, and Personal Factors in Employee Turnover and Absenteeism. *Psychological Bulletin*, 80, 151-176.
11. Saunders, D.M. (1992). Introduction to Research on Hirschman‟s Exit, Voice, and Loyalty Model. *Employee Responsibilities and Rights Journal*, 5, 187-190.
12. Spector, P.E. (1997) *Job satisfaction: Application, assessment and consequences*, London: Sage
13. Withey, M.J.; & Cooper, W.H. (1989). Predicting Exit, Voice, Loyalty, and Neglect. *Administrative Science Quarterly*, 34, 521-539.
14. Vangel, K. (2011) *Employee Responses to Job Dissatisfaction*. Seminar Research Paper Series.Paper37.http://digitalcommons.uri.edu/lrc_paper_series/37http://digitalcommons.uri.edu/lrc_paper_series/37

IS THE BANKING ACTIVITY OF SPANISH CREDIT UNIONS FINANCIALLY EFFICIENT? LOOKING FOR A RESPONSE FROM THE DEA METHODOLOGY (2008-2013)

Maria-Pilar Sierra-Fernandez
University of León, Spain
pilar.sierra@unileon.es

Almudena Martinez-Campillo
University of León, Spain
amarc@unileon.es

Yolanda Fernandez-Santos
University of León, Spain
yfers@unileon.es

ABSTRACT

The banking system is essential to determinate the level of access to credit in financing productive activities in the economy of any country. However, the recent crisis has complicated the activity and margins of financial entities in Spain, which has derived in a deep credit crunch in the Spanish economy. In the middle of the dramatic restructuring and recapitalization process implemented by Spanish commercial banks, credit unions have strengthened their solvency and increased their market share during the crisis period. Despite this evidence, in general, credit unions have been considered less efficient than commercial banks because they have a dual nature: on the one hand, these companies are cooperatives so they are Social Economy enterprises, and, on the other hand, they are entities in the banking system. However, few studies have focused on empirically evaluating their efficiency, and even less in a crisis context. This study aims to estimate the financial efficiency in the banking activity of Spanish credit unions during the period 2008-2013 and to analyse their determinants. To achieve these objectives, an innovative two-stage Data Envelopment Analysis (DEA) methodology is applied under the condition of national and sectorial homogeneity. Our results suggest that credit unions in Spain were quite inefficient in their banking activity during the crisis period, although they were able to improve the management of their inputs to obtain their financial outputs year after year. The findings also show that both the agglomeration in urban areas and the regional effect have influenced significantly on their financial efficiency.
Keywords: Banking efficiency, Credit unions, DEA methodology, Spain

1. INTRODUCTION

The banking sector, which is formed by private banks, saving banks and credit unions, is crucial in financing productive activity, promoting further growth of the economies. However, with the financial crisis that began in 2008, most Spanish savings banks and some private banks were managed in such a way that their annual accounts became very fragile, with a deep reduction of their activity and bank margins, leading to a dramatic process of restructuring and recapitalisation besides plunging the Spanish economy into a credit crunch. In the middle of this unbalanced banking scenario, credit unions carried out a voluntary concentration process, without needing financial public aid, which has enabled them to strengthen their solvency and increase market share. Even so, the efficiency of the credit cooperatives has been considered lower because they have a dual nature as financial enterprises in the Social Economy. Nevertheless, in the current business context, the competitiveness of financial institutions is key for guaranteeing their survival and growth in the future, and their efficiency is especially

relevant if they are to be competitive. However, there have been practically no studies on the financial efficiency of credit unions and its determinants, and even less in a crisis context. For these reasons, this study aims to meet the following objectives. On the one hand, to estimate relative levels of financial efficiency in Spanish credit unions during the recent crisis (2008-2013). On the other hand, to analyse the main determinants of the financial efficiency achieved by such entities. To achieve these objectives, we used the two-stage double bootstrap Data Envelopment Analysis methodology developed by Simar and Wilson (2007). During the first stage, the relative efficiency indices are calculated using the DEA-bootstrap approach, and, during the second one, a truncated bootstrap regression is applied, in which the corrected estimators of efficiency are regressed on a set of explanatory variables. This study is structured as follows: the situation of Spanish credit unions during the crisis period is described in the second section. Then, the empirical evidence on efficiency in credit unions has been rewieved. The fourth section shows the methodology, the sample and the variables used in the statistical analysis. Finally, we present the results and the main conclusions in the two last sections, respectively.

2. CREDIT UNIONS DURING THE CRISIS PERIOD IN SPAIN

Since the start of the crisis situation, unlike several savings banks and some banks that were managed in such a way that their annual accounts became very fragile, leading to a dramatic process of restructuring and recapitalisation involving both State aid and Community aid, the Spanish credit unions were less affected by the crisis and no compulsory process of restructuring with public sector intervention was necessary. However, because of their small size and new legal requirements to strengthen solvency and decrease risk exposure, Spanish credit unions did carry out a voluntary process of concentration, without losing their identity, in order to try to improve their efficiency and competitiveness. As a result, between 2008 and 2013 (Table 1), the number of cooperatives dropped by almost 20%, from 81 to 65 entities, with the resulting decrease in both employees and branches. However, in spite of a 5.81% drop in the level of credits in the general context of credit squeeze caused by the global financial crisis, credit unions became stronger during this period, as can be seen by increases in the number of members, volume of new deposits and total assets of 32.48%, 20.83% and 19.47%, respectively.

Table 1: Basic data on Spanish credit unions (2008-2013)

	Number of credit unions	Membership	Employees	Branches	Assets (thousand €)	Loans (thousand €)	Deposits (thousand €)
2008	81	2,086,896	20,940	5,141	113,010	94,902	75,864
2009	80	2,223,603	20,722	5,079	119,455	97,757	80,637
2010	78	2,320,634	20,352	5,051	121,580	98,359	93,706
2011	74	2,438,052	20,036	4,928	125,891	96,691	90,071
2012	68	2,554,627	19,674	4,832	131,649	93,548	88,231
2013	65	2,764,746	18,910	4,651	135,019	89,389	91,665
% 2008-2013	**-19.75%**	**32.48%**	**-9.69%**	**-9.53%**	**19.47%**	**-5.81%**	**20.83%**

Source: *Unión Nacional de Cooperativas de Crédito* (2008, 2013).

In addition, in spite of their relatively limited participation in the Spanish financial system – less than 5% - Spanish credit unions were able to increase their market share in assets, credits and deposits during the crisis period (Table 2). In 2013, they held 4.70% of total banking assets as opposed to 3.99% in 2008, 6.34% of total negotiated credits as opposed to 5.14% in 2008, and 6.83% of total new deposits in Spain as opposed to 5.91% in 2008.

Table 2: Relative market share of Spanish financial entities (2008, 2013) (%)

	Total assets		Loans and advances to other debtors		Deposits from other creditors	
	2008	**2013**	**2008**	**2013**	**2008**	**2013**
Banks (1)	52.31	48.64	45.38	51.76	41.95	51.79
Saving Banks (2)	43.70	46.66	49.51	41.90	52.14	41.38
Credit Unions	3.99	4.70	5.14	6.34	5.91	6.83

Source: *Unión Nacional de Cooperativas de Crédito españolas* (2008, 2013), *Asociación Española de Banca* (2008, 2013) and *Confederación Española de Cajas de Ahorro*s (2008, 2013). All data come from individual financial statements.

    (1) Both Spanish banks and branches of foreign entities operating in Spain.

    (2) Only entities belonging to the Confederación Española de Cajas de Ahorros with direct financial activity at the end of 2013: Caixabank, S.A; Bankia, S.A; Catalunya Banc, S.A; NCG Banco, S.A; Kutxa Bank, S.A; BMN,S.A.; Unicaja Banco, S.A.; Ibercaja Banco, S.A.; Banco CEISS, S.A.; Liberbank, S.A.; Caja de Ahorros y Monte de Piedad de Ontiyent and Caixa d'Estalvis de Pollença-Colonya.

This good progress made by Spanish credit unions stems from certain factors that set them apart from other financial entities, such as their territorial and social nature, a traditional retail business model and their specific corporate governance (Zvolská and Olsson, 2012).

- The nature of these institutions means that they specialise in their territory of origin, establishing branches close to their customers (even in geographical areas of sparse population) that support employment and growth in that area by financing SMEs, self-employed workers and families. Consequently, they help all the population to gain access to finance (Gutiérrez and Palomo, 2012). At the close of 2013, 59.41% of their branches were in towns with less than 25,000 inhabitants and, of these, 36.31% were linked to municipalities with less than 5,000 inhabitants.

- Such entities are also characterised by their commitment to the Social Economy and local development. They try to reconcile business efficiency with the cooperative principles of self-help, support for the community and distributive justice (Kalmi, 2012). There is also a marked emphasis on their social vocation.

- Regarding their business model, the development of a traditional retail banking that is closely linked to SMEs, self-employed workers and families prevented credit unions from selling the sophisticated financial tools that led to the practical disappearance of savings banks (De Castro and Motellón, 2011). At the end of 2013, credits to members amounted to 64.97% of total assets negotiated as opposed to 52.20% in banks and 56.27% in savings banks, which invested more in markets.

- Finally, regarding their corporate governance, the bye-laws of Spanish credit unions do not require value to be maximised for shareholders but for the cooperative members, and for the community in which they provide their services.

3. EFFICIENCY IN CREDIT UNIONS: EMPIRICAL EVIDENCE

Efficiency in the financial sector can be defined as the degree of optimisation achieved in the use of physical, human and monetary resources for providing different financial services (Piot-Lepetit and Nzongang, 2014). In recent years, many studies have been carried out on the measurement of efficiency in this sector, both internationally (Curi et al., 2012; Moradi-Motlagh et al., 2015) and in Spain (Escobar and Guzman, 2010; Torres et al., 2012). However, practically all of them have focused on financial entities that have a strictly commercial aim – private banks and savings banks– and there is very little evidence on credit unions in spite of their growing popularity. On an international level, most of the prior studies have been carried out in Australia (Worthington, 1999; Ralston et al., 2001; Brown, 2006; Mcalevey et al. 2010). In Asia, most studies have focused on credit unions in Japan, using DEA methodology to estimate financial efficiency (Fukuyama et al., 1999 and Glass et al., 2014).

In Canada, Fortin and Leclerc (2011) also applied the DEA methodology to assess the efficiency of credit unions, as well as Fried et al. (1999) in United States. As far as we know, there has been very little research measuring the financial efficiency of credit unions in Europe, except for the studies by Barra et al. (2013) in Italy, and the works of Belmonte and Plaza (2008) and Belmonte (2012) in Spain.

4. METHODOLOGY, SAMPLE AND VARIABLES
4.1. Methodology
We apply the Algorithm 2 developed by Simar and Wilson (2007) as a two-stage double bootstrap DEA approach. In the *first stage*, we combined the conventional DEA model with the homogeneous bootstrap procedure (Simar and Wilson, 2000), by assuming an output orientation and variable returns to scale (VRS). The output-oriented DEA model was implemented by Fried et al (1993) and Gutierrez and Palomo (2012) to evaluate the ability of credit unions to achieve the maximum quantity of outputs given a certain quantity of inputs. The assumption of VRS is determined by the context of crisis and it is more appropriate when these entities do not operate at an optima scale (Banker et al, 1984). Specifically, we achieve the VRS output-oriented DEA efficiency estimator $\hat{\delta}_i$ by solving the following linear programming problem:

$$\hat{\delta}_i = max_{\hat{\delta}_i \lambda}\{\delta > 0 | \hat{\delta}_i y_i \leq \sum_{i=1}^{n} y_i \lambda; x_i \geq \sum_{i=1}^{n} x_i \lambda; \sum_{i=1}^{n} \lambda_i = 1; \lambda \geq 0\}; i=1, .., n \text{ DMUs}$$

y_i is a vector of outputs;
x_i is a vector of inputs;
λ is an n x 1 vector of constants which measures the weights used to compute the location of an inefficient DMU with the objective to become efficient;
$\hat{\delta}_i$ is the efficiency or inefficiency score for the ith DMU under the VRS assumption.
If $\hat{\delta}_i = 1$, the ith DMU is fully efficient
If $\hat{\delta}_i < 1$, the ith DMU is relatively inefficient.

In the second stage, efficiency estimates are regressed on a set of explanatory variables by employing a truncated regression with bootstrap, using the following regression model:

$$\tilde{\delta}_i = \alpha + \beta z_i + \varepsilon_i, \quad i = 1, ..., n$$

α is a constant term;
β is a vector of parameters to be estimated;
z_i is a vector of specific explanatory variables that are expected to affect the efficiency/inefficiency of the ith DMU;
ε_i is an error term assumed to be $N(0, \sigma_\varepsilon^2)$ distributed with right truncation at $(1 - \alpha - \beta z_i)$.

Conventional and bias-corrected efficiency scores were calculated using the Frontier Efficiency Analysis with R/*FEAR* (Wilson, 2008). Additionally, the STATA 13.1 software was used to estimate the determinants of efficiency.

4.2. Sample
We start from all credit unions registered in Spain between 2008 and 2013. Due to the concentration process, the number of active credit unions varies in each of the six years analysed (the totals were 81 in 2008, 80 in 2009, 78 in 2010, 74 in 2011, 68 in 2012 and 65 in 2013). Consequently, our sample is an unbalanced data panel comprising a total of 446 DMUs or observations.
4.3. Variables

4.3.1. Specification of input and output variables for measuring efficiency
In order to measure the efficiency, we use the "production approach" in which the credit unions use a set of production factors (inputs) to offer services to their customers (outputs). Specifically, we have selected the same inputs and financial outputs as Glass et al. (2014). The inputs chosen are personnel expenditures, amortisation, and financial expenditures; and the financial outputs are total credit investment and security investments (Table 3).

Table 3: Specification of input and output variables for measuring efficiency

INPUT VARIABLES
• ***Personnel Expenses* (PERS)***: It refers to the annual cost of the human resources used by the credit union for performing its activity (in thousands of euros). Workers are the main input in any banking activity, which essentially sells a service. • ***Amortization Expenses* (AMOR):** It covers the annual cost of fixed capital consumption associated with the activity carried out by the credit union (in thousands of euros). It is a relevant input for their business, which is based on a direct distribution model through a large number of branches. • ***Interest Expenses* (INTE):** It reflects the cost of the resources captured at retail level; that is, the annual cost of deposits (in thousands of euros). The basic activity of any financial entity, including credit unions, is to attract deposits so that the funds can then be lent; obtaining a financial product that brings in income in excess of the cost of financing.

OUTPUT VARIABLES
• ***Total Loans (LOAN):*** This output variable indicates the weight of a credit union's banking activity, that is, the capture of deposits to be converted into loans. It is measured by adding total deposits in other financial entities, credits to customers and any securities representing debt that have been used as guarantees (in thousands of euros). • ***Security Investments (SECU):*** It is related the permanent investments in securities (in thousands of euros). Non-permanent investments in securities are not included, nor investments in derivatives because they would make the study heterogeneous and are of only marginal importance in most credit unions.

Source: Compiled by authors.

4.3.2. Measurement of the efficiency determinants
Taking as a reference point the study by Fortin and Leclerc (2011), who consider most of the determinants of financial efficiency that are traditionally analysed in this research line, it is possible to point to the main explanatory factors of the efficiency/inefficiency of credit unions, as follows:

− Wealth level in the place where they operate (WEA): This is quantified by the ratio between total deposits and the number of members of the entity (in thousands of euros per member), assuming that the higher the ratio, the greater the volume of customer savings held in the entity and, therefore, the level of wealth in the district of the credit union (Fried et al., 1999; Fortin and Leclerc, 2011). From a theoretical point of view, greater wealth in the location of the financial entities increases their efficiency in their various activities, because it allows them to improve the relation between the various services provided and the factors used to provide them (Curi et al., 2012).

− Urban concentration (URB): This is made operational by a dummy that takes the value of 1 when the proportion of branches in municipalities with more than 25,000 inhabitants over the total is greater than the annual average for all the entities analysed, and 0 otherwise. Fortin and Leclerc (2011) found that, although credit unions specialise in their local environment, concentration of their services in towns with greater population density has a statistically significant positive effect on their efficiency.

- Size (SIZ): This is measured by total assets of the credit union (in thousands of euros, in logarithmic form for the statistical analysis). In theory, the largest financial entities tend to be most efficient because they benefit from economies of scale. As a result, the largest ones will have more possibilities for maximising the utilisation of inputs and/or obtaining outputs in comparison with the optimum production frontier (Wanke and Barros, 2014).
- Capital adequacy (CAP): This captures the strength of the equity over total assets (in %), so that, the higher the ratio, the lower the leverage and therefore, the lower the entity's financial risk: Theoretically, the financial institutions that capitalise a greater amount of their profit, converting it into equity, are the most efficient because greater capitalisation strengthens credit entities, especially during periods of economic and/or social instability, transmitting greater security to their investors and customers (Mester, 1996). Empirically, most of the studies show that the rate of capitalisation of credit unions affects their financial efficiency positively and significantly (Worthington, 1999, Fried et al., 1999; Fortin and Leclerc, 2011).
- Number of service points (SER): This is measured by the total number of branches the entity has, transformed into a logarithm for the statistical analysis).This variable makes it possible to assess the quality of the organisational structure of institutions to the extent that, in general, the number of branches can be considered to have a negative effect over a efficient behaviour (Worthington, 1999; Fortin and Leclerc, 2011).
- Regional location: Several studies have shown that there is a "regional effect", which suggests that the efficiency of these entities varies depending on their geographical location within a specific country (Glass et al., 2014). Since the credit unions analysed here are located in 15 of the Spanish regions (Andalusia, Aragon, Asturias, Castilla-La Mancha, Castilla y León, Catalonia, Valencian Community, Extremadura, Galicia, Balearic Islands, Canary Islands, Madrid, Murcia, Navarre and Basque Country), this study also takes into account their location (REG) by including 14 regional dummy variables (taking the Valencian Community as the reference category as it is the region with the largest number of such entities).

The truncated regression model used to examine the determinants of financial efficiency is the following:

$$\tilde{\delta}_i = \alpha + \beta_1 WEA_{i,t} + \beta_2 \text{URB}_{i,t} + \beta_3 \ln(SIZ)_{i,t} + \beta_4 CAP_{i,t} + \beta_5 \ln(SER)_{i,t} + \beta_6 REG_{i,n} + \varepsilon_i$$

$\tilde{\delta}_i$ *the dependent variable, refers to the efficiency score from the first stage of the ith DMU;*
α *is a constant term;*
$\beta_1, \beta_2, \dots \beta_6$ *are the parameters to be estimated;*
$WEA_{i,t}$ *is the wealth level in the environment of the ith DMU in period t;*
$URB_{i,t}$ *is the urban concentration of the ith DMU in period t;*
$SIZ_{i,t}$ *is the size of the ith DMU in period t;*
$CAP_{i,t}$ *is the capital adequacy of the ith DMU in period t;*
$SER_{i,t}$ *is the number of service points of the ith DMU in period t;*
$REG_{i,t}$ *is the regional location of the ith DMU in period t; and ε_i is an error term.*

5. RESULTS

Table 4 presents descriptive statistics and correlations. It shows that there is a high positive and statistically significant correlation between firm size (SIZ) and the number of service points (SER) (*r = 0.934; p > 0.01*). Thus, in order to avoid problems of multicollinearity, we estimate the determinants of financial efficiency using two different specifications, so that each one includes one of these variables, together with the other regressors.

Table 4: Descriptive statistics and correlations

n=446 DMUs	Mean	Std.Dev.	Minimum		Maximum	
Input variables						
PERS	12,586.01	31,131.46	139		295,192	
AMOR	1,901.75	6,040.97	3		75,772	
INTE	30,237.74	86,234.80	108		864,536	
Output variables						
LOAN	1,373,602.61	3,823,113.74	6,230		33,540,257	
SECU	36,295.57	178,729.26	0		2,525,994	
Efficiency determinants						
URB	0.61	0.49	WEA	SIZE	CAP	SER
WEA	341.28	1,816.63	1			
SIZ	1,676,243.11	4,612,834.16	0.134	1		
CAP	9.40	4.27	-0.141	-0.166	1	
SER	66.83	147.43	0.054	0.934***	-0.193	1

PERS: Personnel Expenses (in Euros thousands); AMOR: Amortization Expenses (in thousands of Euros); INTE: Interest Expenses (in Euros thousands); LOAN: Total Loans (in Euros thousands); SECU: Security Investments (in thousands of Euros); CSOC: Customer Socialization (in thousands of Euros / member); FINC: Financial Inclusion (in %); URB: Urban Concentration (dummy: 1.0); WEA: Wealth Level in the Place (in thousands of Euros / member); SIZ: Size (in thousands of Euros); CAP: Capital Adequacy (in %); SER: Number of Service Points (in units).
*** Significant at the 1% level (2-tailed).

5.1. First stage: financial efficiency measures

Table 5 reflects DEA efficiency estimates. The average value for the financial efficiency of Spanish credit unions during the total period 2008-2013 was 30.24%, quite far from 50%, which is the minimum acceptable value for indicators of technical efficiency. So, in order to be completely efficient $(\tilde{\delta} = 1)$, these entities should have increased their financial outputs by 69.76% with the existing level of inputs.

Table 5: DEA efficiency estimates

	FINANCIAL EFFICIENCY		
	Original ($\hat{\delta}$)	Corrected ($\hat{\hat{\delta}}$)	Useful ($\tilde{\delta}$)
2008-2013 (n=446 DMUs)			
Mean	0.3602	0.3008	**0.3024**
Std.Dev.	0.2244	0.1671	0.1675
2008 (n=81 DMUs)			
Mean	0.3127	0.2701	**0.2731**
Std.Dev.	0.2030	0.1569	0.1597
2009 (n=80 DMUs)			
Mean	0.3176	0.2730	**0.2751**
Std.Dev.	0.1830	0.1432	0.1437
2010 (n=78 DMUs)			
Mean	0.3539	0.2954	**0.2971**
Std.Dev.	0.2090	0.1515	0.1520
2011 (n=74 DMUs)			
Mean	0.3670	0.3055	**0.3064**
Std.Dev.	0.2325	0.1800	0.1799
2012 (n=68 DMUs)			
Mean	0.4006	0.3259	**0.3271**
Std.Dev.	0.2489	0.1801	0.1800
2013 (n=65 DMUs)			
Mean	0.4297	0.3480	**0.3488**
Std.Dev.	0.2578	0.1855	0.1851

$\hat{\delta}$: Original efficiency estimates; $\hat{\hat{\delta}}$: Bias-corrected efficiency estimates; $\tilde{\delta}$: Useful efficiency estimates.

If the analysis is performed by year, assuming that Spanish credit unions were technically inefficiency in their banking activity during the crisis period, such entities were able to improve their financial outputs from their available resources year after year. In fact, their average financial efficiency grew by 7.57 percentage points – almost 28% - from 27.31% in 2008 to 34.88% in 2013.

5.2. Second stage: determinants of financial efficiency

Table 6 shows the bootstrap truncated regression results. Our findings show that, among the five factors analysed, only the entity's urban concentration (URB) seems to have a statistically significant impact on its financial efficiency. More specifically, the coefficient obtained shows that the greater the presence of credit unions in towns with over 25,000 inhabitants, the higher the level of efficiency achieved in their banking activity. Our result is therefore similar from that of Fortin and Leclerc (2011), who also found a significant positive link for a sample of credit unions in Canada.

Table 6: Bootstrap truncated regression

Variable	FINANCIAL EFFICIENCY	
	β	
	(Bootstr. Stand. Error)	
Constant (α)	0.1408	0.1972***
	(0.1082)	(0.0410)
URB	0.0492***	0.0380**
	(0.0155)	(0.0149)
WEA	0.0000	0.0000
	(0.0000)	(0.0000)
SIZ	0.0029	
	(0.0075)	
CAP	0.0034	0.0027
	(0.0032)	(0.0034)
SER		-0.0049
		(0.0060)
REG (Regional dummies)	Yes***	Yes***
Sigma	0.1309***	0.1308***
	(0.0057)	(0.0058)
Log likelihood	274.2653	274.7377
Wald χ^2(18)	1270.65***	1322.55***

URB: Urban Concentration (dummy: 1, 0); WEA: Wealth Level in the Place (in Euros thousands/member); SIZ: Size (in thousands of Euros); CAP: Capital Adequacy (in %); SER: Number of Service Points (in units); REG: 14 regional dummies to control for the regional location within Spain.
*** Significant at the 1% level; ** Significant at the 5% level

In addition, a "regional effect" (REG) is also observed, with statistically significant positive coefficients in the dummies for the regions of Andalusia, Aragon, Asturias, Castile-La Mancha, Catalonia, Navarre and Basque Country. So credit unions located in such regions showed greater financial efficiency than those located in the Valencian Community. On the other hand, those situated in Galicia, the Balearic Islands and Murcia showed a less efficient banking activity. Therefore, in line with several previous studies (Worthington, 1998, 1999; Fried et al., 1993; Glass et al., 2014), our findings suggest that the financial efficiency of credit unions varies according to the region in which they are located within a single country. Finally, about the other factors considered, neither the wealth of the surrounding area nor other specific characteristics of the Spanish cooperatives themselves such as their size, rate of capitalisation and number of service points, seem to have a significant effect on their financial efficiency

during the crisis. These last results, therefore, coincide with those of other previous studies that also did not find a statistically relevant influence of size (Ralston et al., 2001; Worthington, 2001), rate of capitalisation (Fried et al., 1993; Worthington, 1999, 2001) or number of service points (Fried et al., 1999; Ralston et al., 2001) on the financial efficiency of credit unions. This indicates that, although such internal characteristics of these singular financial entities may on their own help consolidate market position and improve brand image, they do not guarantee greater technical efficiency in their banking activity.

6. CONCLUSION

Although Spanish credit unions were less affected than other financial intermediaries by the consequences of the crisis, this period was characterized by a remarkable inefficiency in their banking activity. On average, these entities achieved a relative rate of financial efficiency of 30.24% between 2008 and 2013 and, consequently, generated 69.76% less than the maximum production that might have been possible if they had used their resources better. This financial inefficiency of almost 70% can be seen in the limited financial outputs obtained – total credit investment and portfolio of securities at maturity – from the human, physical and financial inputs available. The main explanation could be that in Spain, during the six-year study period, there were tight constraints on both liquidity – because of the contraction of private inter-bank markets and other equity markets stemming from lack of confidence in bank solvency – and credit – because of the fear of defaults–. This led to a sharp drop in the demand for banking services on the part of Spanish families and businesses, which had a negative influence on the financial efficiency of the whole sector, including credit unions. Moreover, the Spanish banking sector as a whole needed to show its solvency in the situation of economic and financial crisis, which led the credit unions to be more concerned about attracting new members. Relative to the efficiency determinants, our results show that Spanish credit unions have certain characteristics that may affect the relation between the inputs and outputs of their banking production process, significantly affecting their levels of financial efficiency. More specifically, the entities that have a larger proportion of branches in urban areas are more efficient at a financial level. This may be due to the greater competitive pressure in towns with higher population density. Moreover, financial efficiency varies significantly depending on the regional location of credit unions in Spain. For example, the recent processes of concentration in the sector aiming to boost competitiveness, which have mostly taken place in Andalusia, Aragon, the Basque Country and Navarre, might explain the higher levels of efficiency of the entities located there, while the regulatory and institutional framework of Castilla y León, the Canary Islands and Madrid might mean that their credit unions are less efficient.

LITERATURE:
1. Asociación Española de Banca (2008-2013). *Anuarios Estadísticos*. AEB, Madrid [www.aebanca.es/].
2. Banker, R, Charnes, A. and Cooper, W. (1984). Some models for estimating technical and scale inefficiencies in DEA. *Management Science* 30, 1078-1092.
3. Barra, C, Destefanis, S and Lavadera, G. (2013). Regulation and the Risk: The Efficiency of Italian Cooperative Banks. *Working Paper nº 338. Centre for Studies in Economics and Finance* (CSEF), University of Napoles (Italy).
4. Belmonte, L. (2012). La eficiencia social de las cooperativas de crédito españolas. Una aproximación mediante el análisis DEA. *Revista de Micro-finanzas y Banca Social* 1, 133-151.
5. Belmonte, L and Plaza, J. (2008). Análisis de la eficiencia en las cooperativas de crédito en España. Una propuesta metodológica basada en el análisis envolvente de datos (DEA). *CIRIEC-España, Revista de Economía Pública, Social y Cooperativa* 63, 113-133.

6. Brown, R. (2006). Mismanagement or Mismeasurement? Pitfalls and Protocols for DEA Studies in the Financial Services Sector. *European Journal of Operational Research* 174(2), 1100-1116.

7. Confederación Española de Cajas de Ahorros (2008-2013). *Informes Anuales*. CECA, Madrid [www.ceca.es/].

8. Curi, C, Guarda, P, Lozano-Vivas, A and Zelenyuk, V. (2012). Is foreign-bank efficiency in financial centers driven by home or host country characteristics?. *Journal of Productivity Analysis* 40 (3), 367-385.

9. De Castro, M and Motellón, C. (2011). El modelo de banca cooperativa: el acierto de un siglo. 40 Años de la UNACC: El Nuevo Mapa del Sistema Financiero, *UNACC*, 73-77. Madrid.

10. Escobar, B and Guzmán, I. (2010). Eficiencia y cambio productivo en las cajas de ahorro españolas. *CIRIEC-España, Revista de Economía Pública, Social y Cooperativa* 68, 183-202.

11. Fortin, M and Leclerc, A. (2011). L'efficience Des Cooperatives De Services Financiers: Une Analyse De La Contribution Du Milieu. *Annals of Public and Cooperative Economics* 82(1), 45-62.

12. Fried, H, Lovell C and Vanden, P. (1993). Evaluating the Performance of U.S. Credit Unions. *Journal of Banking and Finance* 17(2/3), 251-265.

13. Fried, H, Lovell, C and Yaisawarng, S. (1999). The Impact of Mergers on Credit Union Service Provision. *Journal of Banking and Finance* 23, 367-386.

14. Fukuyama, H, Guerra, R and Weber, W. (1999). Efficiency and Ownership: Evidence from Japanese Credit Cooperatives. *Journal of Economics and Business* 51, 473-487.

15. Glass, J, McKillop D, Quinn, B and Wilson, J. (2014). Cooperative bank efficiency in Japan: a parametric distance function analysis. *The European Journal of Finance* 20 (3), 291-317.

16. Gutiérrez, M and Palomo, R. (2012). Los sistemas institucionales de protección como respuesta de la banca cooperativa española ante la crisis: Hacia la búsqueda de la eficiencia en su integración. *CIRIEC-Revista de Economía Pública, Social y Cooperativa* 76, 27-50.

17. Kalmi, P. (2012). Cooperative banking. In Toporowski, J and Michell, J. *Handbook of critical issues in finance*, (56-65). Edward Elgar Publishing, London.

18. Mcalevey, L, Sibbald, A and Tripe, D. (2010). New Zealand Credit Union Mergers. *Annals of Public and Cooperative Economics* 81 (3), 423-444.

19. Mester, L. (1996). A study of bank efficiency taking into account risk-preferences. *Journal of Banking and Finance* 20, 1025-1045.

20. Moradi-Motlagh, A, Valadkhani, A and Saleh, A. (2015). Rising efficiency and cost saving in Australian banks: A bootstrap approach. *Applied Economics Letters* 22 (3), 189-194.

21. Piot-Lepetit, I and Nzongang, J. (2014). Financial sustainability and poverty outreach within a network of village banks in Cameroon: A multi-DEA approach. *European Journal of Operational Research* 234(1), 319-330.

22. Ralston, D, Wright, A and Garden K. (2001). Can mergers ensure the survival of credit unions in the third millennium. *Journal of Banking and Finance* 25, 2277-2304.

23. Simar, L and Wilson, P. (2000). A general methodology for bootstrapping in non-parametric frontier models. *Journal of Applied Statistics* 27(6), 779-802.

24. Torres, J, Retolaza, J and San-José, L. (2012). Gobernanza multifiduciaria de stakeholders: Análisis comparado de la eficiencia de Bancos y Cajas de Ahorros. *REVESCO* 108, 152-172.

25. Unión Nacional de Cooperativas de Crédito (2008-2013). *Anuarios Estadísticos de las Cooperativas de Crédito*. UNACC, Madrid [www.unacc.com/].

26. Wanke, P and Barros, C. (2014). Two-stage DEA: An application to major Brazilian Banks. *Expert Systems with Applications* 41, 2337-2344.
27. Wilson, P. (2008). FEAR 1.0: A Software Package for Frontier Efficiency. Analysis with R. *Socio-Economic Planning Sciences* 42, 247-254.
28. Worthington, A. (1999). *Measuring technical efficiency in Australian credit unions*. The Manchester School 67(2), 231-248.
29. Worthington, A. (2001). Efficiency in Pre-Merger and Post-Merger Non-Bank Financial Institutions. *Managerial and Decision Economics* 22, 439-452.
30. Zvolská, M and Olsson, J. (2012). *Cooperatives and Restructuring. European Economic and Social Committee*, Brussel.

INNOVATION, PRODUCTIVITY, EXPORT PERFORMANCE AND THE INVESTMENT CLIMATE: A STUDY BASED ON INDIAN MANUFACTURING FIRMS' DATA

Patrick Plane
Université Clermont Auvergne (UCA), CNRS, CERDI, F-63000 Clermont-Ferrand, France

Marie-Ange Veganzones-Varoudakis
Université Clermont Auvergne (UCA), CNRS, CERDI, F-63000 Clermont-Ferrand, France
veganzones@aol.com

ABSTRACT

In this paper, we study the interactions between firms' innovation, productivity and exports in the case of the Indian manufacturing sector. To differentiate the incentives from the ability to innovate, we distinguish the inputs of innovation (R&D and training), from the outputs. Our findings highlight a virtuous circle between the three components of innovation, as well as between firms' R&D, innovation and exports. The results suggest a positive effect of R&D on innovation (product innovation in particular), of innovation on exports (product and marketing innovation especially), and of exports on R&D. Furthermore, it would seem that training and R&D reinforce each other in the Indian firms' innovation process: doing R&D incites firms to train their workers, and training stimulates R&D in return. Productivity of the Indian manufacturing firms seems to benefit from that dynamics, as exporting and innovating would improve firms' total factor productivity. As for the investment climate, our results suggest that the differences in the Indian firms' environment participate in their performance gap. These results are all the more important in the context of the Make in India program and the Indian business environment deficiencies.
Keywords: *Export, Innovation, Productivity, Investment Climate, Manufacturing, Firm Survey Data*

1. INTRODUCTION

In the literature, manufacturing is traditionally considered as the sector of most rapid growth through innovation, technical progress, scale economies, externalities and knowledge spillovers (Kaldor 1966; Murphy et al., 1989). Improving productivity in manufacturing, in particular, is recognized as an effective way of enhancing performance and catching up with other better performers (what is widely known as the convergence hypothesis, Howitt, 2000). Despite the recent surge of the Indian service sector, the central role of manufacturing has also been debated by Lin (2012), Aghion (2012) and Stiglitz et al. (2013) who think that manufacturing remains the only realistic path toward sustained growth for low-income, low-skilled, and labor-abundant countries such as India. With the "National Manufacturing Policy" (NMP) in 2012, and the "Make In India" campaign launched by the Prime Minister Narendra Modi on September 2014, objectives are to enhance manufacturing so that the sector emerges as a new engine of growth to provide jobs to a large number of unemployed and under-employed workers. Poor quality of governance, the regulatory environment, deficiencies in physical, economic and social infrastructure are regularly reported as major reasons of the retarded industrial growth and the wide inter-state differences in performances in the country (Mitra, et al., 2002; Lall and Mengistae, 2005; Hulten et al., 2006; Gupta et al. 2008). The central policy agenda of these new national-level programs is thus to address manufacturing firms weaknesses to unlock the potential of growth, innovation and competitiveness of the Indian manufacturing sector. By studying the interactions between firms' innovation, productivity and exports, this paper can be

seen as a contribution to the present debate. In this study, we differentiate the incentives from the ability to innovate and distinguish the inputs of innovation, from the outputs. Two innovation's inputs are considered: the implementation of a research and development (R&D) program, and the implementation of a training program. The innovation's output follows the OECD Oslo manual which defines 4 types of innovation: (i) product, (ii) process, (iii) organisational and (iv) marketing innovation. Data are from World Bank Enterprise Surveys (WBES) conducted in India between June 2013 and December 2014. Each enterprise is interviewed only once. The survey is stratified to ensure the representativeness of the Indian manufacturing sector. In addition to innovation, several indicators are available for productivity and exports as well. In this paper, we consider a large number of interactions between firms' innovation (in the broad sense), productivity and exports. Success in innovating, exporting and being more productive can also be influenced by the environment in which the firms operate: their investment climate[1]. Previous works have shown that business environment is decisive for firms' performance in developing countries (see Dethier et al, 2008 for a review of the literature). Because India only ranked 130th out of 190 countries in 2015 in the World Bank Ease of Doing Business Index, important gains could be made by improving the investment climate of the Indian manufacturing firms. In this study, we classify investment climate into 9 categories: (i) infrastructure, (ii) information & communication technology (ICT), (iii) human capacity, (iv) access to financing, (v) government relations, (vi) security, (vii) international opening or access to global knowledge, (viii) agglomeration and (ix) competition. Several biases may distort the estimations results of these relations. Because of the interactions between the 5 variables of the system, there is a risk of reverse causality. A simultaneity bias can also result from the interactions between the investment climate and the firms' performances. Actually, while investment climate may affect firms' innovation, productivity or exports, the reverse can be true. The most productive firms for example have probably more ease to adapt their environment to their needs. In addition, measurement errors are possible, especially for investment climate opinion variables. These issues will be treated by using the most adequate than possible statistical approaches (instrumental estimations in particular). Our results suggest the existence of a virtuous circle between R&D, innovation and exports of the Indian manufacturing firms. An innovative firm would be tempted to engage more into R&D, which in turn would materialise into more innovations (product innovation in particular). These innovations would increase firm exports, what would encourage the firm to undertake more research in return (and to innovate and export more consequently). Training is associated to the process. Trained workers would stimulate R&D, which in turn would materialize into innovation, then exports. Trained workers would allow more innovation directly as well (process, organizational and marketing innovations in particular). These findings highlight a virtuous circle between the 3 components of innovation: the 2 innovation inputs (R&D and training) and the innovation output. Undertaking training and R&D would stimulate innovation output, what would incite firms to do more R&D, and consequently more training. In addition, it would seem that training and R&D reinforce each other in the innovation process: doing R&D would incite Indian firms to train its employees, and training would stimulate R&D in return. Firms' productivity seems to benefit from that dynamics. When TFP is the proxy of productivity, exporting and innovating would increase firms' productive performance, validating the learning by exporting hypothesis illustrated by Clerides et al. (1998), Greenaway and Keller (2007) and Aw et al., (2011) for example. The reverse would be partly true, as it is low productive firms that would be willing to innovate more (and more productive firms that would have less incentive to do so). However, we do not see any effect of firms' productive performance on the level of exports (no "self-selection into exporting", as developed by Melitz,

---

[1] Investment climate is defined by the World Bank as "all factors specific to firms' location that affect market opportunities or their desire to invest for productive purposes, create jobs and develop their activities".

2003, and Bernard and Jensen, 2004), or on the decision to launch a R&D or training program. As for the investment climate, our results suggest the importance of the differences in firms' environment in explaining the performance gap across the Indian manufacturing firms. These results are robust to various proxies of innovation, productivity and exports, as well as to different indicators of investment climate, methods of estimations and bias corrections. This study contributes to the literature in different ways. *First*, we define a broad concept of innovation by differentiating the inputs of innovation from the outputs, what has been rarely the case in previous studies. *Second*, research and development (R&D) is not the only input of innovation considered, as usually done in the literature. *Third*, we look at multiple interactions between our broad concept of innovation, productivity and exports and do not limit our research to one or two of them, as previous studies do. *Fourth*, having access to an extensive dataset on Indian manufacturing firms, we control for a large number of variables not usually used in the literature. In particular, we broaden the scope of the analysis to the investment climate in which the firms operate and who may participate in the dynamics we study. *Fifth*, our topic of research rarely covers developing countries, for which data are very limited. The study of India is of particular interest in line of its emerging nature and the progress expected from its manufacturing sector. *Sixth*, the robustness of our results is tested in several ways, not frequent in previous studies, especially on developing economies. Instrumental estimations allow us to address endogeneity at work in the interactions, as well as linked to the nature of the investment climate data. Other issues are considered, such as measurement errors and multicollinearity.

2. EMPIRICAL APPROACH:
2.1. Presentation of the System
2.1.1. Training of Employees
Training can be a factor of innovation and be set up in that purpose. This is true for "non technological" innovation such as "organisational" or "marketing", and for "technological" ones, also through channels such as R&D. Training can also aim at improving firms productivity. Trained people may be more efficient and organise better their work. They can make a better use of equipment and handle better various situations. Training can have a direct effect on R&D as well. It is the case, for example, if training is undertaken in view of starting a R&D program, or to give managers a new strategic vision and encourage them to risk and innovate. Nevertheless, there is no reason to believe that training affects firm's exports, if not indirectly through innovation or productivity. In the WBES, the proxy of training is a binary variable indicating if firms have implemented a training program during the 3 years preceding the survey. In the Indian sample, nearly 42% of the firms indicate that they have trained their workers

2.1.2. Research and Development (R&D)
The above hypotheses are also true for R&D, with one exception: it is supposed that firms' R&D has no direct effect on their productivity, in addition to exports. On the one hand, a company who invests in R&D may be willing to launch a training program, for example if skills for research are missing in the firm or outside, or to divulge and apply the results of the R&D. On the other hand, the first aim of R&D is innovation, and it will be through innovation that R&D will eventually have an impact on productivity and export. . The R&D proxy is also a binary variable which distinguishes enterprises that have spent on R&D in the past 3 years from others. 36% of the Indian firms declare that they undertook R&D.

2.1.3. Innovation
Innovation, unlike training and R&D, can have a direct effect on each of the 4 other variables of the system. Innovation can impact R&D and training.

An innovative company may want to reinforce its advance by doing more R&D and training. The opposite can be true if a less innovative firm undertakes R&D and training to innovate more. In that case, however, it can be assumed that less innovating firms will first spend on training, less expensive and risky than R&D, in order to invest more effectively in R&D afterwards. Innovation can also increase the productivity of a company (Aw et al., 2011). This is particularly true for "process" and "organizational" innovations. Finally, innovation is also described as an incentive to exports (the "exporting by innovating" hypothesis, illustrated by Caldera, 2009, and Cassiman et al, 2010, for example), what may be the case of "product" and "marketing" innovations, but also of process and organisational innovation. The WBES follow the Oslo Manual definition. On average, almost half of the Indian firms answer that they have innovated[2], a share that is most probably overestimated (Cirera and Muzi, 2016).

2.1.4. Productivity
A productive company, with adequate resources, is a priori more able to innovate than a less productive one (Bustos, 2011). However, it may not be motivated to do so[3]. On the contrary, a low-productive firm may want to innovate to catch up with competitors, although it may not have enough resources for that. For these reasons, the effect of productivity on training, R&D and innovation is unsure. This uncertainty is due to the fact that the innovation equations reflect the capacity to innovate, but also the incentive to do so. The effect of productivity on exports seems however clearer. It is expected to be positive (the "self-selection into exporting" hypothesis) or insignificant, but never negative. We'll use two alternative measures of productivity (i) labor productivity (LP) as the value-added per worker and (ii) total factor productivity (TFP) calculated as the residual of a Cobb-Douglas production function.

2.1.5. Exports
As for innovation, exports can have a direct (and positive) effect on each of the 4 other variables of the system: on productivity (the "learning by exporting" hypothesis), on R&D and training (as incentive in particular)[4], and on innovation (the "innovating by exporting" hypothesis illustrated by Van Beveren et al., 2010, Girma et al., 2008, and Damijan et al., 2009, for example). However, as for productivity, because the equations of innovation do not allow dissociating enough the capacity from the incentive to innovate, the direction of the impact of exports on innovation (in the broad sense) is uncertain. Exports may provide financial resources or act as an incentive to innovate, but exporting firms may not be willing to innovate if for example they are dominant on the export market. Our proxy of exports will be the share of production exported (directly and/or indirectly). In total, 20% of the firms of the Indian sample export on average 8.5 % of their production.

2.1.6. Competition
Competition, as factor of performance, can influence firms' decision to innovate, spend on training and R&D, and be more productive. There is no reason to think however that competition represents an incentive for firms to export. This effect is possible only indirectly, via innovation and productivity.

---

[2] 45% for "product", 47% for "process" , 44% for "organisational" and 45% for "marketing" innovation.
[3] Innovation usually aims at discouraging new firms from entering the market or eliminating competitors. However, a monopoly firm may have less incentive to innovate. To distinguish between these two opposite effects, we will control for the degree of competition.
[4] As exporting firms face increased competition, they have a greater interest in innovating to differentiate themselves from their competitors and preserve their market share.

The proxy used for competition is the presence of informal firms in the sector in which the firm operates[5]. On the one hand, informal competition can push firms to perform better. On the other hand, the "unfair" character of this type of competition can prevent firms from innovating and being more productive. We'll see in the empirical part which of the two effects prevails.

Figure 1: Presentation of the System
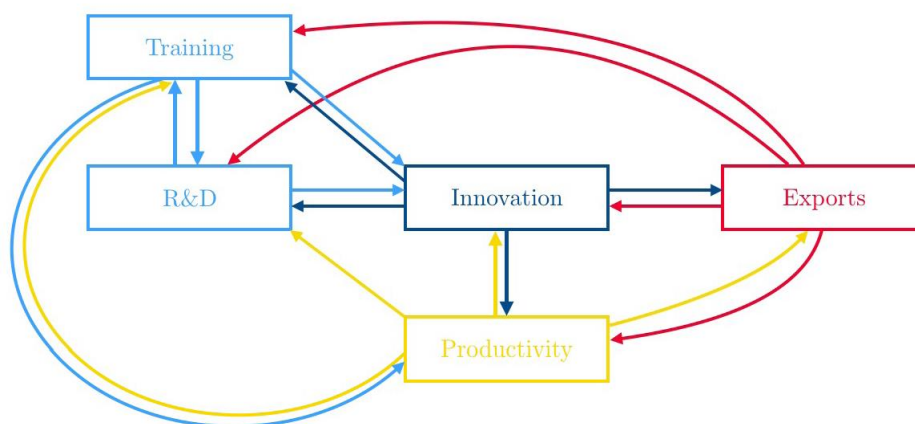
2.2. Estimation of the System: Methodological Aspects

If the interactions mentioned in section 3.1 are found in the Indian manufacturing sector, OLS estimates are biased due to the endogeneity of the variables of interest. We choose instrumental estimations to correct for the simultaneity bias. Multivariate instrumental estimations (such as 3SLS, FIML or GMM-3SLS) are not always possible because of convergence issues. In addition, a single specification error is sufficient to "contaminate" the entire system. Potential problems may be encountered at finite distance and efficiency gains are possible in case of over-identification only. Finally, the exclusion-restriction conditions are not easy to verify, especially in a 5 equations system. These conditions ask to find at least one variable specific to each equation, exogenous in all the equations of the system, and significant in the equation in which it is introduced. This variable is then excluded from the other equations of the system. If the 5 equations are estimated in a univariate mode, no causal link between the instrument and the variable instrumented is needed, a simple correlation is sufficient[6]. For all these reasons, we chose to use the univariate estimations to estimate our system. In an univariate frame, the 2SLS are the simplest and most commonly used approach among the instrumental methods. However, although there are no robust estimators in case of weak instruments, the 2SLS are considered as the least efficient in that case. Other methods, such as the Limited Information Maximum Likelihood (LIML) and the Continuously Updating Estimator (CUE), are generally preferred in that case[7].

2.3. The Equations of the System

2.3.1. The Equation of Training

The decision to start a training program can be influenced by doing R&D, innovating, the productivity level, exporting and competition (see section 2.1.1). The investment climate and characteristics of the firms may also play a role in this decision (see equation 1)[8].

---

[5] The share of firms reporting informal competition as a constraint is an increasing function of the size of the market on which they operate (positive correlation).

[6] It is then possible that the instrument is not one of the explanatory variables

[7] Because of the large number of control variables introduced in our equations, the correlation between the 5 variables of interest and the variables used as "instruments" does not always seem high. It is possible, in that case, that the "instruments" be weak in the sense of Staiger and Yogo (1997).

[8] The characteristics of the firms that we retrained are firms' age and size, the partnership with a large company, the fact to

To estimate the system, we need to introduce in the equation one variable correlated with training, exogeneous in all 5 equations, and that will be excluded from the 4 other ones. We used the variable related to the access to a skilled labor force as instrument[9]. One can think that the more a firm is constrained in its recruitment of skilled work, the more it may decide to train its own workers. This investment climate variable will not be introduced into the 4 other equations as a composite indicator of Human capacity is included in the regressions. The equation of training is as follows:

Training = α_1+ $\beta_{1;1}$ R&D + $\beta_{1;2}$ Innovation + $\beta_{1;3}$ Productivity + $\beta_{1;4}$ Exports + δ_1 X + γ_1 Y + μ_1 Access to Qualified Labor + λ_1 Competition + ε_1

$$(1)$$

where X and Y are the matrix of the investment climate variables and the individual characteristics of the firms respectively.

2.3.2. The Equation of Research and Development (R&D)

Similarly, R&D is regressed on the 4 other variables of interest of the system, a set of control variables composed of competition, firms' investment climate and characteristics, and the instrument variable (see equation 2). It may be thought that the more difficult it is to obtain permits and licenses, the more difficult it will be to patent an invention. Thus, the answer to the question "On a scale of 0 to 4, to what degree are licenses and permits an obstacle to the operations of the firm?" can be decisive to explain R&D. This investment climate variable will not be introduced into the 4 other equations as we'll use the variable of corruption as proxy for Government relation. The equation of R&D is as follows:

R&D = α_2 + $\beta_{2;1}$ Training + $\beta_{2;2}$ Innovation + $\beta_{2;3}$ Productivity+ $\beta_{2;4}$ Exports + δ_2 X + γ_2 Y + μ_2 Access to permits & licenses + λ_2 Competition + ε_2

$$(2)$$

2.3.3. The Equation of Innovation

In the innovation equation, we control for the 4 other variables of the system, competition, the investment climate and characteristics of firms (see equation 3). We choose the fact of having a foreign license as instrument for innovation. Having a foreign license makes possible to use an invention from abroad and introduce something new at home. We make the reasonable assumption that this variable has no effect on the 4 other variables of the system. The equation of innovation is as follows:

Innovation = α_3 + $\beta_{3;1}$ Training + $\beta_{3;2}$ R&D + $\beta_{3;3}$ Productivity + $\beta_{3;4}$ Exports + δ_3 X + γ_3 Y + μ_3 Foreign licenses + λ_3 Competition + ε_3

$$(3)$$

2.3.4. The Equation of Productivity

We regress the proxy of productivity on the variables of training, innovation, exports and control for competition, the investment climate and the characteristics of the firms (see equation 4). We choose as instrument the stocks of capital and of intermediate consumption.

---

belong to an industrial association, and the sector and the State in which they operate. As for the investment climate, variables were regrouped into 9 categories: (i) infrastructure, (ii) information & communication technology (ICT), (iii) human capacity, (iv) access to financing, (v) government relations, (vi) security, (vii) international opening or access to global knowledge, (viii) agglomeration and (ix) competition.

[9] Answer to the question "On a scale of 0 to 4, to what degree is access to a skilled workforce an obstacle for the operation of the firm? "

The exclusion of these variables from the other equations makes sense. In the R&D, training and innovation equations, the effect of equipment goes more likely via the information and communication technologies (ICT), especially since we already control for sectors and firms size. In the export equation, the effect of capital and intermediate consumption, if any, passes through the productivity, in addition to the firms' size and sector fixed-effects that control for the effect of each sector capital intensity. The equation of productivity is as follows:

$$\text{Productivity} = \alpha_4 + \beta_{4;1} \text{ Training} + \beta_{4;2} \text{ Innovation} + \beta_{43} \text{ Exports} + \delta_4 \text{ X} + \gamma_4 \text{ Y} + \mu_{4.1} \text{ Capital} + \mu_{4.2} \text{ Intermediate Consumption} + \lambda_4 \text{ Competition} + \varepsilon_4$$
$$(4)$$

2.3.5. The Equation of Exports
The variables introduced in the export equation are innovation, productivity, investment climate and the characteristics of the firms (see equation 5). Two instruments are chosen: international quality certification and being located in an export zone. The second variable is certainly more exogenous than the first one in the 5 equations of the system. In addition, it does not seem correlated with the other 4 variables of interest. The equation of exports is as follows:

$$\text{Exports} = \alpha_5 + \beta_{5;1} \text{ Innovation} + \beta_{5;2} \text{ Productivity} + \delta_5 \text{ X} + \gamma_5 \text{ Y} + \mu_{5.1} \text{International Quality Certification} + \mu_{5.2} \text{ Export Zone} + \varepsilon_5$$
$$(5)$$

3. ESTIMATION RESULTS
We present the results of the univariate instrumental estimations when the LIML methodology is used (Tables 1 and 2 in Appendix). This method is preferred to the 2SLS in case of weak instruments. In addition to the 5 variables of interest, the investment climate can also be endogenous. The results presented are the ones when the investment climate variables are instrumented (see Nguyen and Véganzonès-Varoudakis, 2017 for the methodology)

3.1. Equation of Training
It would seem that undertaking R&D would push Indian manufacturing firms to train their workers. On the contrary, a negative and significant effect of innovation and exports is found. It would seem that low innovation and low export rate act an incentive for firms to train their workers in order to innovate and export more. Indeed, training is less costly to finance than R&D for low performing firms (see section 2.1.3). On the contrary we will see that incentive of more performing firms to train workers is indirect and goes, in both cases, through R&D (see section 3.2). Productivity however does not look like an incentive to train or not workers for the Indian manufacturing companies. This could mean that training is part of another dynamics, linked to R&D and innovation more specifically. High or low productivity does not look like an incentive to launch a training program in order to innovate or be more productive. As for the investment climate, it appears to have a positive effect on the Indian firms' decision to initiate training, especially human capacity, access to financing and to power supply. In a satisfactory environment, it is worth investing in training for the Indian manufacturing firms. Deficit in skilled labor is also a reason to train workers. These results are all the more important in the context of Indian States investment climate deficiencies.

3.2. Equation of Research and Development (R&D)
Results suggest that exporting and innovating would incite Indian manufacturing firms to undertake R&D, what is more costly than to initiate a training program, the solution that seems to be chosen by the less innovative and less exporting firms). For less innovative and less

exporting firms, their involvement in R&D seems to come after training their workers, as seen before. Similarly, the more firms train their workers, the more they would be willing to embark on R&D, what highlights a virtuous circle between these 2 components (see previous section). As for training, productivity does not seem to play a role in the Indian manufacturing firm decision to initiate R&D. Investment climate does not look to be determinant either as only competition would stimulate Indian firms R&D. The effect of the investment climate, thus, would be indirect, through the incentive of firms to train employees and through innovation, for human capacity, infrastructure and financing specifically (see next section).

3.3. Equation of Innovation
Trained workers look determinant to improve Indian manufacturing firms' capacity to innovate. This would be particularly true for process, organizational, management and marketing innovations. R&D, on its side, would stimulate product innovation mainly. These findings highlight a virtuous circle between the 3 components of innovation: the 2 innovation inputs (R&D and training) and the innovation output. Undertaking training and R&D would stimulate innovation, what would incite firms to do more R&D, and training in return. This virtuous circle seems to also work for less innovative firms. In addition, training and R&D seem to reinforce each other in the innovation process: doing R&D would incite Indian firms to train their workers, and training would stimulate R&D in return (see previous section). High Productivity, however, does not seem to be a factor of innovation, invalidating the self-selection into innovation hypothesis (see Table 1 in Appendix). It looks like that the incentive to innovate of the Indian manufacturing firms comes predominately from R&D, training and the investment climate. In the case of TFP, however, low productive firms seem willing to innovate more to improve their performances, as shown in the results Table 2 in Appendix. This confirms that high productive firms would have less incentive to do so. Similarly, it seems that exporting firms do not self-select themselves into innovation. As for firms' environment, human capacity, access to power supply and to financing seems to count for innovation.

3.4. Equation of Productivity
When the proxy of productivity is TFP, the Indian manufacturing firms seem to benefit from a learning process when exporting, as well as from innovating in the case of marketing management and organizational innovation in particular (see Table 2 in Appendix). These results validate the "learning by exporting" hypothesis developed in the literature. As for training, the effect seems indirect in that case, through R&D and innovation. Investment climate participates in the Indian manufacturing firms' differences in productivity when the corresponding variables are instrumented by their predictions. This is the case of all aspects of the firms' environment: human capacity, infrastructure, ICT, financing, international openness, corruption and security. These results are all the more important in the context of the Indian States business environment deficiencies, as well as low firms productivity (see Mitra et al, 2014). Improving exports, innovation and the investment climate would certainly contribute to boost the manufacturing productive performances.

Figure following on the next page

Figure 2: Main Estimation Results
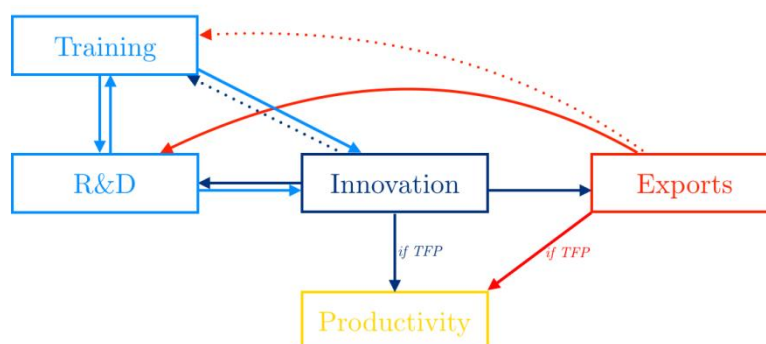
An arrow represents a positive and significant effect, and a dashed arrow a significant and negative effect

3.5. Equation of Exports

It does not seem that the Indian manufacturing firms "self-select themselves into exporting". This effect is not found in the Indian sample, as productivity does not appear decisive to explain firms' exports. Main determinants of exports are innovation (product, management and marketing innovation in particular), what validates the "self-selection into exporting" assumption for innovation, the investment climate, especially access to financing, ICTs and to global knowledge (through imports of intermediate goods more specially) as well as international quality certification and to be located in an export zone.

4. CONCLUSION

The objective of this study was to identify the interactions between firms' innovation (in the broad sense of the Oslo Manual), productivity and exports in the case of the Indian manufacturing sector. Our results suggest the existence of a virtuous circle between R&D, innovation and exports of the Indian manufacturing firms. An innovative firm would be tempted to engage more into R&D, which in turn would materialise into more innovations. These innovations would increase firm exports, what would encourage the firm to undertake more research in return (and to innovate and export more consequently). Training is associated to the process. Trained workers would stimulate R&D, which in turn would materialize into innovation, then exports. Trained workers would allow more innovation directly as well (process, organizational, management and marketing innovations in particular). These findings highlight a virtuous circle between the 3 components of innovation: the 2 innovation inputs (R&D and training) and the innovation output. Undertaking training and R&D stimulates innovation output, what incites firms to do more R&D, and consequently more training and innovation. Furthermore, less innovative and exporting firms would be tempted to engage more into training, less costly than R&D, what would improve innovation (and exports), as well as R&D. In addition, it would seem that training and R&D reinforce each other in the innovation process: doing R&D would incite Indian firms to train their employees, and training would stimulate R&D in return. Productivity seems to play a less major role in that dynamics. High productivity could for example give the firms the capacity or be an incentive to innovate. It looks like that incentive and capacity come more from R&D, training and investment climate in the case of the Indian manufacturing firms, invalidating the self-selection into innovating hypothesis. Productivity does not seem to stimulate the Indian manufacturing firms' exports either (no self-selection into exporting). Identically, high or low productivity does not seem an incentive for the Indian manufacturing firms to undertake R&D or launch a training program.

However, when total factor productivity is taken as proxy of firms' productive performances, low productivity seems to motivate firms to innovate more. In the case of TFP as well, the Indian manufacturing firms would benefit from a learning process when exporting, validating the learning by exporting hypothesis. It is thus TFP that would profit from the virtuous dynamics of innovating and exporting, as there also seem to be a feedback of innovation (organisational, management and marketing innovation in particular) on firms' TFP. Thus increasing innovation and exports would certainly boost Indian manufacturing firms' productive performances. As for exports, it looks like Indian innovative firms self-select themselves into exporting, what makes of innovation a central element for the Indian manufacturing firms' exports. This dimension is all the more important in the context of low exporting rate of the Indian manufacturing sector (see Mitra et al., 2014). Helping the Indian manufacturing firms to innovate (in the broad sense of the Oslo Manual) would certainly participate in the effort of the government to make this sector more integrated into the world economy. This could pass by an increased access to training, R&D, foreign licences, competition and the improvement of the investment climate in general, as planned by the National Manufacturing Policy and Make in India programs. This would also be important for the Indian manufacturing firms' productive performances since our results highlight a learning process when exporting. Firms' productive performances would be enabled if export rates were increased. Exporting firms however do not self-select themselves into innovation, as incentive to innovate looks to be indirect, through R&D as innovation input. Otherwise, exports are sensitive to the investment climate in which the firms operate, as well as to obtaining international quality certifications and to be located in an export zone. All these results go in the direction of the recent programs launched by the Indian governments to make of the manufacturing a sector of growth and competitiveness. As for the investment climate, our results confirm its importance in explaining the performance gaps across the Indian manufacturing firms. This is true for human capacity, infrastructure (power especially), ICT, financing, international openness, corruption and security for firms' productivity. Furthermore, it looks like a better access to financing, ICT and global knowledge (through importing in particular) would help the Indian manufacturing firms to export more. Investment climate appears to have a significant and positive effect on the firms' decision to launch a training program as well (especially human capacity, access to financing and to power supply), thus being an incentive to undertake R&D and to innovate, directly and indirectly. Access to financing, power supply and human capacity would also be of particular importance for the Indian manufacturing firms to innovate. Finally, facing competition would incite firms to undertake R&D and be more productive. Improving investment climate would thus contribute to the Indian manufacturing firms' performances in a cumulative process. These results are all the more important in the context of the Indian States business environment deficiencies and the Make in India program. To conclude, we will however recall the main limitations of the present work. First, the reliability of the data can be discussed. Innovation in particular is probably overestimated. The tests also show that the instrumentation may not always be strong enough (in the innovation equation more specifically). Although robust tests with weak instrumentation are carried out, the econometric literature is very recent on this point and will be further developed. This is why, although attempts have been made to limit the various possible biases (measurement error and simultaneity in particular), it would still seem too uncertain to definitively conclude on causalities

LITERATURE:
1. Aghion, P. 2012. Growth Policy and the State, *Working Paper* 3, the Growth Dialogue: Washington, D.C.
2. Aw, B.Y. Roberts, M.J., and Yi Xu, D. 2011 R&D investment, exporting, and productivity dynamics. *The American Economic Review*, v 101, 4:1312-1344.
3. Bernard, A.B. and Jensen, J.B. 2004. Exporting and productivity in the USA, *Oxford Review of Economic Policy*, 20: 343–57.
4. Bustos, P.. 2011 Trade liberalization, exports, and technology upgrading: Evidence on the impact of MERCOSUR on Argentinian firms. *The American Economic Review*, 101, 1: 304-340.
5. Caldera, A. 2010. Innovation and exporting: evidence from Spanish manufacturing firms. *Review of World Economics,* 146, 4: 657-689.
6. Cassilan, B., Golovko, E. and Martinez-Ros, E.. 2010 Innovation, exports and productivity. *International Journal of Industrial Organization*, 28, 4: 372-376.
7. Cirera, X. and Muzi, S. 2016. Measuring Firm-Level Innovation Using Short Questionnaires : Evidence from an Experiment. *Policy Research Working Paper,* No. 7696. World Bank, Washington, DC.
8. Clerides, S. K., Lach, S. and Tybout J. R. 1998 Is learning by exporting important? Micro-dynamic evidence from Colombia, Mexico, and Morocco. *The Quarterly Journal of Economics*, 113, 3:903-947.
9. Damijan, J. P., Kostevc, Č. and Polanec, S. 2010 From innovation to exporting or vice versa?. *The World Economy,* 33, 3: 374-398.
10. Dethier, J.-J., Hirn, M. and Straub, S. 2010 Explaining enterprise performance in developing countries with business climate survey data. *The World Bank Research Observer*, 26, 2:258-309.
11. Girma Sourafel, Gorg Holger, and Hanley Aoife. 2008 R&D and exporting: A comparison of British and Irish firms. *Review of World Economics*, 144, 4: 750-773.
12. Greenaway D. Guariglia, A. and Kneller, R. 2007 Financial factors and exporting decisions. *Journal of International Economics*, 73, 2: 377-395.
13. Gupta, P., Hassan, R. and Kumar, U. 2008. What Constraint Indian Manufacturing, *ERD Working Paper* . 119, Asian Development Bank: Manila.
14. Howitt, P.. 2000 Endogenous Growth and Cross-Country Income Differences, *American Economic Review*. 90: 829-846.
15. Hulten, C.R., Bennathan, E. and Srinivasan, S. 2006. Infrastructure, externalities, and economic development: a study of the Indian manufacturing industry, *The World Bank Economic Review*, 20: 291-308.
16. Kaldor, N. 1966. *Causes of the Slow Rate of Economic Growth in the UK*, Cambridge University Press.
17. Kathuria, V, Raj, R. S. N, and Sen, K. *Productivity in Indian Manufacturing: Measurements, Methods and Analysis*, 2014 Routledge India, London.
18. Kleibergen, F. and Paap, R. 2006 Generalized reduced rank tests using the singular value decomposition. *Journal of Econometrics,* 133, 1: 97-126.
19. Lall, S. and Mengistae, T. 2005 Impact of Business Environment and Economic Geography on Plant-Level Productivity: An Analysis of Indian States, *Policy Research Paper Series* 3664, The World Bank: Washington, D.C..
20. Lin, J. 2012 *New Structural Economics: A Framework for Rethinking Development and Policy*. The World Bank: Washington D. C.
21. Melitz, M. J. 2003 The impact of trade on intra-industry reallocations and aggregate industry productivity. *Econometrica*, 71, 6: 1695-1725.

22. Mitra, A., Varoudakis A. and Véganzonès-Varoudakis, M-A., 2002 Productivity and Technical Efficiency in Indian States' Manufacturing: the Role of Infrastructure, *Economic Development and Cultural Change*, 50: 395-426.
23. Mitra, A., Sharma.C. and Véganzonès-Varoudakis, M.A. 2014 Trade Liberalization, Technology Transfer and Firms' Productive Performance. The case of Indian Manufacturing. Journal of Asian Economics 33:1–15.
24. Murphy, K.M., Shleifer, A. and Vishny, R.W. 1989. Industrialization and the Big Push, *Journal of Political Economy*, 97 (5): 1003-1026.
25. Nguyen, H. T. M. and Véganzonès-Varoudakis, M.A. 2017 Investment Climate, Outward Orientation and Manufacturing Firm Productivity: New Empirical Evidence, *Etudes et Documents du CERDI* 17, Université Clermont Auvergne, Clermont-Ferrand.
26. Staiger D., Stock, J. H. I 1997 nstrumental Variables Regression with Weak Instruments. *Econometrica*,, 65, 3: 557-586.
27. Stiglitz, J., Lin, J. and Monga, C. 2013 The rejuvenation of Industrial Policy, *Policy Working Paper* 6628, the World Bank: Washington, D.C.
28. Van Beveren I., Vandenbussche H. 2010. Product and process innovation and firms' decision to export, Journal of Economic Policy Reform, 13, 1

APPENDIX

TABLE 1: Estimation Results with Labor Productivity (LIML)

	Training	R&D	Total Innovation	Product Innovation	Labor Productivity	Exports	Exports	Exports
Training		0.41**	2.3***	-0,91	-0,07			
		(2,82)	(3,79)	(-1.43)	(-0.39)			
R&D	1.4***		-0,67	1.4*				
	(4,56)		(-1.01)	(2,1)				
Total Innovation	-0,26*	0.25***			0,01	5.2**		
	(-2.27)	(6,83)			(0,09)	(2,65)		
Product Innovation							11,9$	
							(1,82)	
Marketing Innovation								21.4**
								(2,65)
Labor Productivity	0,00	0,00	-0,01	0,00		-0,36	-0,13	-0,72
	(-0.19)	(0,17)	(-0.27)	(-0.02)		(-0.60)	(-0.20)	(-1.11)
Exports	-0,008**	0,005**	-0,002	-0,006	0,00			
	(-2.79)	(2,95)	(-0.41)	(-1.00)	(-0.07)			
Size	0,01	0,01	-0,02	0,10	-0,39	4,2*	3,9*	4,5*
	(0,39)	(0,39)	(-0.16)	(1,04)	(-1.59)	(2,44)	(2,28)	(2,59)
Age	0,00	0,00	0,00	0,00	0,001$	0,01	0,02	-0,01
	(1,58)	(-1.14)	(-0.92)	(0,2)	(1,91)	(0,29)	(0,67)	(-0.51)
H_PCA	0.12***	-0,05	0,12	0,07	0,02	1,0	1,7$	0,81
	(3,47)	(-1.61)	(1,37)	(1,24)	(0,82)	(1,01)	(1,84)	(0,74)
Fin_PCA	0.06*	-0,04	0,14	0,04	0,1***	1,9$	2.6**	1,9$
	(2,12)	(-1.59)	(1,64)	(0,69)	(4,54)	(1,94)	(3,07)	(1,95)
ICT_PCA	0,01	0,00	-0,04	0,01	0,05***	1.0*	0.99*	1.1*
	(0,73)	(-0.07)	(-0.83)	(0,41)	(3,6)	(2,1)	(2,05)	(2,09)
Generator	0.16***	-0,05	-0,16	0,29	0,02	-1,4	-1,5	-0,84
	(5,37)	(-1.53)	(-1.48)	(1,8)$	(0,54)	(-1.58)	(-1.52)	(-0.97)
Imported Inputs	0,36	0,03	-1,10	0,80	1,8**	0.69***	0.69***	0.71***
	(0,85)	(0,1)	(-0.89)	(0,85)	(3,91)	(5,06)	(4,98)	(5,1)
Corruption	0,03	0,00	-0,13	0,00	0,15*	2,3	2,1	1,9
	(0,42)	(-0.08)	(-0.80)	(-0.03)	(2,28)	(1,18)	(1,09)	(0,9)
Security_PCA	-0,02	0,01	-0,07	-0,01	0,1***	1,4$	1,0	1,5$
	(-0.83)	(0,71)	(-1.17)	(-0.37)	(4,14)	(1,88)	(1,49)	(1,89)
Part Big Firm	0,04	0,01	-0,48	0,10	0,05	2.5*	0,59	3.1*
	(1)	(0,21)	(-4.73)	(1,09)	(1,58)	(2,03)	(0,64)	(2,16)
Industrial Association	-0,01	0,03	-0,16	0,08	0,17***	-0,75	-1,1	-1,2
	(-0.31)	(1,01)	(-1.56)	(0,98)	(4,13)	(-0.66)	(-0.94)	(-0.97)
Industrial Zone			0,32**	0,02	0,07$			
			(2,68)	(0,33)	(1,72)			
City Size	0,00	0,05	0,71	0,06	0,16*	-3,2	-3,2	-2,2
	(0,03)	(0,83)	(3.25)	(0,29)	(2,01)	(-0.64)	(-1.05)	(-0.88)
City Size (square)	0,01	-0,01	-0,13**	0,00	-0,02	-3,0	1.3	0,08
	(0,54)	(-1.08)	(-2.58)	(-0.12)	(-1.23)	(-0.63)	(-0.54)	(0,13)
Informal competition	-0,04	0,05**	-0,26***	0,00	0,02			
	(-1.26)	(3,04)	(-4.49)	(0,03)	(1,18)			
Access Qualified Work	-0.05***							
	(-3.33)							
Access Permis & Licenses		0.02**						
		(2,66)						

Foreign Licence			0.64***	0,16$				
			(5,34)	(1.86)				
Stock of Intermed. Cons.					0.002***			
					(3,63)			
Capital Stock					0,00			
					(-1.15)			
Export Zone						24.2***	21.6***	25.5***
						(8,39)	(7,65)	(8,12)
Quality Certification						2.8***	3.0***	3.4***
						(3,84)	(4,19)	(4,56)
Intercept	-1,0	0,3	5,3	0,6	-2,2	-15,7	-22,2	24,0
	(-0.65)	(0,25)	(1,29)	(0,22	(-2.00)	(-0.31)	(-0.45)	(0,44)
Observations	5151	5188	4995	5005	3534	5227	5239	5236
Hausman Test	0	0	0	0,00	0,90	0,03	0,26	0,02
Hansen Test	0,81	0,13	0,47	0,65	0,32	0,92	0,07	0,99
F-stat (Labor)	459	454	370	388	408	528	528	528
F-stat (Training)	.	13,1	10,4	7,8	9,7	.	.	.
F-stat (R&D)	14,9	.	11,4	8,8	.	.	.	.
F-stat (Innovation)	18,0	17,0	.	.	9,2	18,74	18,53	10,4
F-stat (Productivity)	99	100	107	93	.	120	120	120
F-stat (Exports)	19,4	19,4	19,3	13,1	15,3	.	.	.
Kleibergen-Paap Test	3,4	9,1	1,6	2,6	7,1	17,8	15,6	9,6

*Heteroscedastic robust t-statistics are into brackets, $ p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001*

TABLE 2: Estimation Results with Total Factor Productivity (LIML)

	Training	R&D	Total Innovation	Product Innovation	TFP	TFP	Exports	Exports	Exports
Training		0,09$	3,7*	-0,64	0,18	0,07			
		(1,66)	(2,45)	(-1,60)	(0,78)	(0,3)			
R&D	3,5*		-1,8	0,9*					
	(1,98)		(-1,19)	(2,4)					
Total Innovation	-0,87$	0,3***			0,09		5,3$		
	(-1,78)	(6,63)			(1,33)		(1,65)		
Product Innov								24$	
								(1,65)	
Marketing Innov									19$
									(1,65)
Market/ Orga Innov						0,20$			
						(1,73)			
TFP	-0,04	0,05	-0,62$	-0,03			-2,0	-2,1	-0,82
	(-0,23)	(0,82)	(-1,70)	(-0,48)			(-1,01)	(-0,97)	(-0,35)
Exports	-0,017$	0,004*	0,009	-0,003	0,005*	0,006**			
	(-1,98)	(2,34)	(0,75)	(-1,00)	(2,52)	(2,78)			
Size	0,00	0,00	-0,01	0,01	0,01	0,01	0,47*	0,46*	0,52*
	(-0,18)	(0,67)	(-0,48)	(1,38)	(1,14)	(1,2)	(2,24)	(2,17)	(2,44)
Age	0,00	0,00	-0,01	0,00$	0,00	0,00	0,02	0,03	0,01
	(0,64)	(-0,04)	(-1,41)	(-0,56)	(-0,16)	(-0,50)	(0,5)	(0,75)	(0,46)
H_PCA	0,27$	-0,08	0,19	0,06$	0,07*	0,06	1,2	0,84	1,5
	(1,8)	(-1,58)	(1,32)	(1,72)	(2,24)	(1,87)$	(0,79)	(0,49)	(1,08)
Fin_PCA	0,11	-0,04	0,25	0,04	0,17***	0,16***	2,0	1,7	1,4
	(1,06)	(-1,23)	(1,68)	(1,02)	(5,17)	(4,73)	(1,32)	(1,02)	(0,79)
ICT_PCA	-0,02	0,01	0,00	0,01	0,12***	0,12***	1,48*	1,56*	1,38*
	(-0,41)	(0,36)	(0,03)	(0,34)	(7,33)	(7,17)	(2,24)	(2,21)	(2,06)

Generator	0,25**	-0,05	-0,37	0,18**	0,06*	0,07*	-1,8	-2,0	-1,3
	(2,63)	(-1,57)	(-1,51)	(2,91)	(2,09)	(2,55)	(-1,42)	(-1,46)	(-1,20)
Imported Inputs	-0,01	0,00	-0,01	0,00	0,04***	0,04***	0,82***	0,77***	0,83***
	(-0,64)	(1,09)	(-0,28)	(0,87)	(7,57)	(7,57)	(4,26)	(3,86)	(4,23)
Corruption	-0,09	0,02	-0,11	0,03	0,19*	0,20**	2,9	3,0	3,7
	(-0,48)	(0,43)	(-0,38)	(0,38)	(2,54)	(2,64)	(1,13)	(1,08)	(1,42)
Security_PCA	-0,05	0,01	0,04	-0,02	0,11***	0,11***	0,77	1,09	0,30
	(-0,69)	(0,45)	(0,44)	(-0,71)	(5,3)	(5,18)	(0,83)	(1,08)	(0,33)
Part Big Firm	-0,06	0,03	-0,33	0,03	0,09**	0,11**	2,3	2,1	3,1
	(-0,68)	(1,17)	(-2,49)	(1,02)	(2,68)	(2,84)	(1,48)	(1,4)	(1,6)
Industrial Association	-0,04	0,02	-0,15	0,05	0,21***	0,21***	-1,5	-1,6	-1,3
	(-0,33)	(0,48)	(-0,87)	(1,25)	(6,11)	(6,05)	(-1,05)	(-1,03)	(-0,86)
Industrial Zone			0,35$	0,03	-0,04	-0,05			
			(1,86)	(0,74)	(-0,90)	(-1,00)			
City Size	-0,295	0,15$	1,07**	0,02	0,16	0,18	-1,0	0,35	-1,9
	(-0,88)	(1,81)	(2,61)	(0,15)	(1,51)	(1,67)$	(-0,29)	(0,08)	(-0,57)
City Size (square)	0,068	-0,03$	-0,17*	-0,01	-0,01	-0,02	-0,02	-0,43	0,04
	(0,92)	(-1,70)	(-2,01)	(-0,41)	(-0,55)	(-0,72)	(-0,03)	(-0,46)	(0,05)
Informal competition	-0,209	0,07***	-0,08	0,01	0,04*	0,04*			
	(-1,53)	(3,82)	(-0,83)	(0,25)	(1,96)	(2,15)			
Access Qualified Work	-0,13$								
	(-1,78)								
Access Permis & Licenses		0,02*							
		(2,34)							
Foreign Licence			0,79**	0,05$					
			(2,85)	(1,78)					
Stock Intermed. Cons.					0.002$	0.003*			
					(1,91)	(2,11)			
Export Zone							26,6***	27,5***	26,7***
							(6,94)	(6,86)	(6,78)
Quality Certification							3,8***	3,2*	3,5**
							(3,51)	(2,54)	(3,06)
Intercept	0,40	-1,2	16,2*	1,6	6,6***	7,0***	-22,8	-47,1	-28,8
	(0,09)	(-0,84)	(2)	(0,85)	(4,22)	(4,49)	(-0,33)	(-0,62)	(-0,41)
Observations	3548	3570	3555	3560	3567	3569	3590	3597	3596
Hausman Test	0	0,00	0,00	0,00	0,01	0,01	0,11	0,44	0,10
Hansen Test	0,50	0,22	0,24	0,46	0,28	0,28	0,66	0,08	0,77
F-stat (Labor)	534	529	403	403	421	421	514	514	514
F-stat (Training)	.	13,0	11,0	9,1	9,5	10,0	.	.	.
F-stat (R&D)	13,9	.	11,0	9,1	.	.	.	.	.
F-stat (Innovation)	15,5	15,8	.	.	9,2	8,5	17,3	15,8	9,8
F-stat (Productivity)	70,3	71,3	73,7	73,6	.	.	76,4	76,5	76,4
F-stat (Exports)	18,3	17,9	18,1	14,4	14,0	16,6	.	.	.
Kleibergen-Paap Test	3,5	7,9	1,5	2,3	6,5	7,8	14,9	14,3	9,2

*Heteroscedastic robust t-statistics are into brackets, $ p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001*

A CRITICAL VIEW ON ENTREPRENEURSHIP EDUCATION: A LITERATURE REVIEW

Elif Aladag
Adnan Menderes University, Turkey
ealadag@adu.edu.tr

Sinem Dal
National Ministry of Education, Turkey
sinem.dal@hotmail.com

ABSTRACT
Our world, today, is called information and technology age. It has been globalising and getting smaller day by day. Use of technology has an important impact in this globalised and small world. The rapid development and increase of information necessitates entrepreneurial individuals to support their countries' economy. In order to have such entrepreneurial individuals, eduucation policies ought to have been regulated accordingly. In Europe entrepreneursip education is supported through European Union funded projects to motivate schools and make teachers be aware of the importance of this education at schools.From kindergarten to high school education entrepreneurship is included in the curriculum through different school subjects. However while integrating entrepreneurship acquisitions in the curriculum it should not be forgotten to give ethics in it. With the lights of these thoughts, this study was carried out to emerge the nessesity of ethical dimension of entrepreneurship as it is one of the most important acquisitions which should be included in the school subjects' curriculum. It was realised that entrepreneurship is not that much criticized or critically approached in literature and entrepreneurship education is not commonly related with ethics, they are few in number. In this study, entrepreneurship and ethical values were related and how they can be reflected in entrepreneurship education were discussed. The study was designed as a literature review.
Keywords: Entrepreneurship,Entrepreneurship Education, Ethics

1. INTRODUCTION

The world is in a rapid change and this change causes an unavoidable necessity for countries to have a competitive structure in this economic rapid development. The result of this competitiveness is to cultivate entrepreneurial individuals. That is, individuals having the courage to innovate, take risks, have self-confidence, take initiative are needed in the societies (Aladag, 2017, p. 51). Schools have crucial roles in cultivating entrepreneur individulas with effective entrepreneurship acquisitions in the curriculum. Students should have self-confidence and should be directed in a good way to be successful entrepreneurs in the future. Entrepreneurship, defined in various forms in the field, can be defined in general and with common sense as the attributes and abilities of behavioral clusters that enable individuals and groups to change and innovate. In recent years, an increasingly debated discussion of how well education systems prepare young people for adult life in general and how well they prepare them to be an entrepreneur, especially in the business world. These debates define the need for society, organizations and individuals to develop capacities to cope with a more competitive, uncertain and complex world (Gibb, 1993, p. 11). Especially in this process, which has been passed from the industrial society to the information society, as the global economy accelerates entrepreneurship has become a necessity and gained importance (Özkul, 2007). In literature entrepreneurship is also defined as starting a business, being a business owner, developing and growing business (Bridge and O'Neill, l998:35).

In the definitions of entrepreneurship conceptual expressions like competition, risk taking, self-confidence, taking initiative, starting a business and new business are commomly mentioned (Dogan, 2014, p. 87). With a general definition through these concepts, entrepreneurship can be defined as having the ability to start a business by taking risks and to be competitive enough to keep up with the business. As humans there must always be positive relations between us to live comfortably. Moreover in these relationships it is very important to be able to give promise, trust and be trustworthy to each other. In every society there are some sets of ethical values. Witout them it may be harder to live in confidence especially while having economic relations with the other people. It is obvious that economic activity can merely function with recourse to some value system that comprises a set of ethical presumptions about how economic activity ought to be conducted and regulated. There has to be confidence between people especially who have economic relations (Banks, 2006, p. 461). In this study, it is aimed to associate ethics with entrpreneurship education at schools. Ethics refers to individual moral and behavioral habits that determine the essential character of existence. Most Western writers expresses that Greek philosophers' writings such as Socrates (469-399 B.C.), Plato (427-347 B.C.) and Aristotle (384-322 B.C.) were based on ethical concepts. In addition, the oldest articles on moral codes and laws can also be found in Judaism (1800 B.C.) and Hinduism (1500 B.C.) (Hisrich and Peters, 1998, p. 23). Ethics is formed from all actions and actions of the individual from the past to the present, from the point of care as right or wrong, valued or worthless. According to this; ethics is a moral philosophy, morality is a research theme of ethics (Ülgen and Mirze, 2004, p. 442). Ethics can be interpreted broadly as a science about good and evil, or as a rule of action for a particular group or individual (Özlem, 1997, p. 336).Ethic rules were put forward as rules as a result of examining moral principles and values. (Kapu, 2009, p. 55-56). Along with being an ethical philosophy of morality, it holds the concept of morality within the scope of its application. Ethics sets out the purpose of individual life and the essentials of the operational necessities of individual-society relations (Çalışırlar, 1983, p. 135). Entrepreneurs have important roles in developing society's economy. As being a key to the health of economy, entrepreneur is key to the ethical well-being too. In literature limited definitions of entrepreneurship which shows success based on wealth creation ignores the ethical necessities (Miller, Collier, 2010, p. 80). At schools teachers are expected to make students gain students entrepreneurship education through school subjects. In this globalized world it is important for students to grow up as entrepreneurs both for themselves and for economy of their society. However while trying to cultivate students as future's entrepreneurs, ethics should not be forgotten and ignored. As people need confidence between themselves in relations and trustworthiness is a crucial value to be gained, importance of ethics ought to be given together with entrepreneurship education.

2. ETHICS IN ENTREPRENEURSHIP EDUCATION

Several skills and attitudes addressed by entrepreneurship education are not specified as entrepreneurship education alone, however they are developed through different ways, including training activities that do not have to be labelled as entrepreneurship education. Entrepreneurship education has three objectives:

- Equip individuals with the abilities, knowledge and attitudes which will allow them to take responsibility of their own learning, career and their lives. These are; Motivation, awareness, individual responsibility etc.
- Increase individual awareness of the world, economy and change in general.
- Support and develop entrepreneurial and innovative behavior. This aim is necessary for the acquisition of knowledge (e.g. knowledge of the economy and business world) and some attitudes (e.g. awareness of and positive attitude towards entrepreneurship and change in general) (Curth, 2011, p. 14).

Entrepreneurship training has been started at all levels from kindergarten to university education in order to train individuals with entrepreneurial skills. Policy makers in Europe believe that more entrepreneurship is required to reach higher levels of economic growth and innovation (Oosterbeek and Praag, 2010, p. 442). It can be observed globally that there is an increasing trend for government policy to advocate entrepreneurship (O'Connor, 2013, p. 546). This rapid development in entrepreneurship education has also led to the questioning of entrepreneurship education. These criticisms are that students are over-emphasized on issues such as establishing their own businesses and earning money while social responsibility, and the ethical and value dimension of entrepreneurship is ignored. However, the intersection of entrepreneurship and ethics is relatively new and more recently attracted to research interest (Harris, Sapieza and Bowie, 2009, p. 407). In the lights of a general resaerch on entrpreneurship education in literature, it was found that researchers have focused on effects of entrepreneurship education. Some found negative results between entrepreneurship education on entrepreneurial skills whereas some found positive. However they all think of socio-economic results and growth in economy via entrepreneurship education. It is possible to learn and read about business ethics of institutions. However while integrating entrepreneurship in curriculum, it is clearly seen that ethics is not taken as one of the important issue rather it is commonly associated with business world. The purouse of this research is to attract attention to importance of ethics while cultivating entrpreneurs at schools. One major approach to ethics is via virtue. Virtues are action-guiding character traits that aim at good results. The ethics literature is populated with many competing accounts of what the good results should be and, consequently, with competing accounts of what virtues we should have. In the table below entrepreneurial trait and moral virtues are related and the virtues and values listed in the right column of the table are of an entrepreneurial code for business ethics (Hicks, 2009, p. 53-55).

Table 1. Entrepreneurial Character Traits and Related Moral Virtues (Hicks, 2009, p.55)

Entrepreneurial Trait	*Moral Virtues*
Knowledge and Creativity	Rationality
Ambition	Pride
Guts	Courage
Initiative	Integrity
Perseverance	Independence
Trial and error	Objectivity
Productivity	Productiveness
Trade value for value	Justice
Entrepreneurial Consequence	*Moral Value*
Experiencing and enjoying success	Self-esteem, Pride, Flourishing

The values in the right column are called codes for business ethic but they should be given during the education period to have these values when becoming entrpreneurs in the future. In the Eurydice report (2016, p. 66-68), which covered the earlier reports between 2006-2012, embedding entrepreneurship education in the school curriculum was analysed. It examined the central level documents and it was determined to what extent entrepreneurship education is recognised in the curriculum. It was found out whether the approach is cross-curricular, or whether entrepreneurship education is taught either as a separate subject, or integrated into other

subjects and whether it is a compulsory or optional subject in the curriculum. According to the report results in primary education about half of the European countries have a cross-curricular approach to entrepreneurship education. In fourteen education systems entrepreneurship education is integrated into compulsory subjects. It seems to be quite rare for entrepreneurship education to be an optional subject except five countries. At lower secondary level twenty-one countries refer to cross-curricular objectives for entrepreneurship education. In lower secondary education, seventeen countries reported that entrepreneurship is either compulsory, either as a separate subject, or integrated in another subject. However when reading all the report pages it is very few to see ethics. It seems to be not one of the priorities of entrepreneurship education. It is just mentioned in the entrepreneurship education strategies of countries like Spain, Slovakia, Hungary and Slovenia out of thirty-seven countries in the report. This is an important clue about EU countries' lack in integrating ethics in entrpreneurship education. In order to integrate ethics with entrpreneurship in curriculum some activities, role plays can be done and students can make read educational stories. It will not be that difficult to integrate these two issues in the curriculum.

3. RELATED RESEARCHES ON ENTREPRENEURSHIP EDUCATION AND INTEGRATION OF ETHICS IN ENTREPRENEURSHIP EDUCATION

Entrepreneurship is a widely examined and discussed area in the world. It is possible to understand via the the resaerches carried out in different countries having different management styles, religions, cultures and so on. However it was recognised that in these studies entrepreneurship education was commonly taken into account as its effectiveness and impact on pupils to be good entrepreneurs in the future. It is for sure that there are researches on entrepreneurship and ethics but they are not related to the ethics in entrepreneurship education at schools. Therefore it can be said that there is an important lack in this field. To support these thougts, following table was prepared after a deep research. Sources of the researches in the list are as follows: proquest database, google scholar, national theses centre, the journal of entrepreneurship.

Table following on the next page

Table 2. List of Previous Researches

Titles of the Researches	Aims of the Researches
Why people work as hard as they do: The role of work ethic as a legitimizing myth in the work lives of new york city's fast food workers. M. Speight (2018).	Aim of the research was to explore the cultural construct of work ethic as a legitimizing myth and the role this myth plays in the work lives of fast food workers working and living in New York City in poverty
Towards Understanding Entrepreneurship's Role in Our Common Future: Essays from the Sustainability-Entrepreneurship Nexus by K.E. Pierre, (2017).	Aim of this research was to facilitate a better understanding of the relationship between entrepreneurship and attainment of sustainable development.
Characteristic of Competitive Entrepreneurship Education Ecosystems Around the World: Implications for Qatar M. A. Shirzai (2017)	Research aimed to explore entrepreneurship education ecosystems in six major economies and entrepreneurship hubs, including UAE, Lebanon, Saudi Arabia, Singapore, United States and Qatar, to draw policy implications improvements for Qatar's entrepreneurship education ecosystem
Transnational Actors and New Venture Growth: Examining Formal and Informal Entrepreneurship from an Inter-Disciplinary Perspective by E. M. Moore (2017)	Research aimed to address the gaps in the literature by developing an inter-disciplinary study of how systemic political and economic relationships impact formal and informal entrepreneurs across nations of diverse institutional qualities.
Entrepreneurship Education: Effect of a Treatment in Undergraduate College Courses on Entrepreneurial Intent and Ideation by R.Matthews (2017)	With this research it was aimed to investigate the influence of deliberate practice of an experiential learning exercise in new venture ideation in undergraduate college entrepreneurship courses on student entrepreneurial intent and ideation.
Ethics in Entrepreneurship Education: The Case of a Student Start-Up Entrepreneur by Jodyanne Kirkwood, Melissa Baucus, Kirsty Dwyer (2016)	This is one of the rare researches on importance of ethic in entrpeneurship education. The research aimed to address the gap in the literature to examine how a student entrepreneur starting a venture while completing an assignment frames issues and how these frames affect moral awareness (i.e., whether or not the entrepreneur considers ethical dimensions).
Integrating ethics into entrepreneurship education: An exploratory textbook analysis by M. Tesfayohannes, & C. Driscoll (2010).	Aim of the study was to analyze a sample of small business and entrepreneurship textbooks to assess the extent to which ethics is integrated into them.
International Validation of the Corruption Perceptions Index: Implications for Business Ethics and Entrepreneurship Education by P.G. Wilhelm (2002)	Aim of this study was to emerge the imporatnce of integrating ethic in entrepreneurship education for business students
Örgütsel girişimcilik ekseninde etik dışı davranışların ussallaştırılması: özel bir hastane işletmesinde uygulama el kitabı önerisi (Rationalizational of on ethical behaviors in the dinemension of organizational entrepreneurship) by Hakan Gökçe (2000)	Aim of this research was to emphasize the importance of entrepreneurs who offer opportunities to capture the future of organizations by working out ethical principles by getting rid of unethical behaviors
The Ethical Context of Entrepreneurship: Proposing and Testing a Developmental Framework by Michael H. Morris Minet Schindehutte, John WaltonJeffrey Allen	The aim of the research was to increase understanding of the ethical climate of entrepreneurial firms as they grow and develop.
Ethical Dimension of Entrepreneurship Education by N. Doğan (2014)	Aim of the research was to focus on the importance of ethics in entrpreneurship.

It is for sure that there are a lot more researches on entrepreneurship education however the researchers found that the researches on entrpreneurship are about its effectiveness and how it can be improved. What is criticised in this research is the lack of integration of ethics in entrpereneurship education and when searching for the researches, it can be clearly seen that there is a big gap in the field. Although there are researches on the integration of ethics, there are few in number and they are not related to the early education period like primary and secondary level students.

4. CONSLUSION

As it was previosly mentioned according to the data of Eurydice Report, entrepreneurship education starts from the kindergarten level to the university and entrepreneurship education is commonly compulsory in primary school level in Europe. However via the deep research on the past researches about ethics in entrpreneurship education it is possible to see the big gap which is about giving ethical values in entrepreneurship acquisitions at schools. The previos researches were generally carried out about entrepreneurial universities, business students while entrepreneurship education starts from kindergarten. Therefore it is thought that scientific researches on ethics in entrpreneurship education should be widened. Both qualitative and quantitative reseraches can be carried out with the view of teachers, students and even administrators about importance of ethics in entrepreneurship. Perhaps this research may give ideas to the teacher for good role plays for students to gain ethical values while being entrepreneurs.

LITERATURE:

1. Aladag, S. (2017). The Views of Class Teachers on Acquisition of Entrepreneurship Ability. *Journal of Education and Training Studies*, *5*(8), 51-61.
2. Banks, M. (2006). Moral economy and cultural work. *Sociology*, *40*(3), 455-472.
3. Bridge, S., O'Neill. K. (2012). *Understanding Enterprise, Entrepreneurship And Small Business*, Palgrave Macmillan .
4. Curth, A. (2011). Mapping of teachers' preparation for entrepreneurship education. *Final Report, Framework Contract No EAC*, *19*(06).
5. Çalışlar, A. (1983). Ansiklopedik kültür sözlüğü. *İstanbul: Altın Kitaplar Yayınevi*.
6. Doğan, N. (2014). Girişimciliğin Etik Boyutu. *Bilgi Sosyal Bilimler Dergisi*, (1), 86-98.
7. European Commission/EACEA/Eurydice, 2016. Entrepreneurship *Education at School in Europe.* Eurydice Report. Luxembourg: Publications Office of the European Union
8. Gibb, A. A. (1993). Enterprise culture and education: understanding enterprise education and its links with small business, entrepreneurship and wider educational goals. *International small business journal*, *11*(3), 11-34.
9. Gökçe, H. (2000). *Örgütsel girişimcilik ekseninde etik dışı davranışların ussallaştırılması: özel bir hastane işletmesinde uygulama el kitabı önerisi* (Doctoral dissertation, SDÜ Sosyal Bilimler Enstitüsü).
10. Harris, J. D., Sapienza, H. J., Bowie, N. E. (2009). Ethics and entrepreneurship. *Journal of business venturing*, *24*(5), 407-418.
11. Hicks, Stephen R. C. (2009), "What Business Ethics Can Learn from Entrepreneurship", The Journal of Private Enterprise, 24(2): 49-57
12. Hisrich, R. D., Michael P. (1998), *Entrepreneurship*, United States of America: Irwin/McGrawHill,Inc.
13. Kapu, H. (2009), "Akademik Bir Disiplin Olarak İş Ahlakı", *İşletmelerde İş Etiği*, (Ed. Sabri Orman ve Zeki Parlak), İstanbul: İstanbul Ticaret Odası Yayınları (İTO), Yayın No: 2009-23.

14. Mathews, R. D. (2017). *Entrepreneurship Education: Effect of a Treatment in Undergraduate College Courses on Entrepreneurial Intent and Ideation* (Doctoral dissertation, Ball State University).
15. Miller, R., Collier, E. (2010), "Redefining Entrepreneurship: A Virtues and Values Perspective", *Journal of Leadership, Accountability and Ethics,* 8(2): 80-89.
16. Moore, E. M. (2017). *Transnational actors and new venture growth: Examining formal and informal entrepreneurship from an inter-disciplinary perspective* (Order No. 10262202). Available from ProQuest Dissertations & Theses A&I; ProQuest Dissertations & Theses Global. Retrieved 20. 01. 2018 from https://search.proquest.com/docview/1881313201?accountid=15331
17. Morris, M. H., Schindehutte, M., Walton, J., & Allen, J. (2002). The ethical context of entrepreneurship: Proposing and testing a developmental framework. *Journal of Business ethics*, *40*(4), 331-361.
18. Pierre, K. E. (2017). *Towards Understanding Entrepreneurship's Role in Our Common Future: Essays from the Sustainability-Entrepreneurship Nexus* (Doctoral dissertation, Syracuse University).
19. Shirzai, M. A. (2017). *Characteristics of Competitive Entrepreneurship Education Ecosystems Around the World: Implications for Qatar* (Doctoral dissertation, Hamad Bin Khalifa University (Qatar)).
20. O'Connor, A. (2013). A conceptual framework for entrepreneurship education policy: Meeting government and economic purposes. *Journal of Business Venturing*, *28*(4), 546-563.
21. Oosterbeek, H., Van Praag, M., & Ijsselstein, A. (2010). The impact of entrepreneurship education on entrepreneurship skills and motivation. *European economic review*, *54*(3), 442-454.
22. Özlem, D. (2001). *Günümüzde Felsefe Disiplinleri*. İstanbul: İnkılap Kitabevi.
23. Speight, M. (2018). *Why people work as hard as they do: The role of work ethic as a legitimizing myth in the work lives of new york city's fast food workers* (Order No. 10638062). Available from ProQuest Dissertations & Theses A&I; ProQuest Dissertations & Theses Global. (1968624170). Retrieved from https://search.proquest.com/docview?accountid=15331
24. Tesfayohannes, M., & Driscoll, C. (2010). Integrating ethics into entrepreneurship education: An exploratory textbook analysis. *Journal of Entrepreneurship Education*, *13*, 85.
25. Ülgen, H., Mirze, K. (2004), *İşletmelerde Stratejik Yönetim*, İstanbul: Literatür Yayıncılık.
26. Wilhelm, P. G. (2002). International validation of the corruption perceptions index: Implications for business ethics and entrepreneurship education. *Journal of business Ethics*, *35*(3), 177-189.

MATERIALISM OR THE PURSUIT OF VOLUNTARY SIMPLICITY IN THE REALIZATION OF LIFE SATISFACTION?

Ariana Nefat

Juraj Dobrila Univeristy of Pula, Faculty of Economics and Tourism "Dr. Mijo Mirkovic"
anefat@unipu.hr

Dragan Benazic

Juraj Dobrila Univeristy of Pula, Faculty of Economics and Tourism "Dr. Mijo Mirkovic"
dbenazic@unipu.hr

Tiziano Suran

International School for Advanced Studies (SISSA)
tsuran@sissa.it

ABSTRACT

The aim of the current paper was to investigate whether or not young people show material values or suggest that they acquire a simpler life style in achieving life satisfaction. The Partial Least Square (PLS) Method was used for analysing data and testing hypotheses; the measurement scales were checked before the hypotheses were tested. Results confirmed that the participants considered a wish for fulfilment as very significant, that is, they do not pay much attention to material wealth and aspire to non-material forms of consumption and mental growth, which is characteristic for individuals who acquire voluntary simplicity. The study showed young people's average level of materialism which was negatively related to life satisfaction. A voluntary simplicity life style, being increasingly acquired by young people, did not show a statistically significant correlation with life satisfaction when the whole sample was considered, while a correlation between voluntary simplicity and life satisfaction was positive in the segmented sub-sample, which in the latter case implies the importance of materially simpler life when it comes to achieving life satisfaction. The paper is oriented only to the population of young people who should be compared to the population of adults and a group of voluntary simplifiers. The key value of the study lies in the simultaneous research into the orientation to materialism or voluntary simplicity as related to life satisfaction in young people; this has been the first one of this type in the Croatian context.
Keywords: materialism, voluntary simplicity, life satisfaction

„There is enough of everything you really need to be happy, but you do not believe it, and so you seek to „own" whatever it is that you most desire, imagining that if you own it, you can keep it forever, that no one can take it away from you, that you can do what you want with it – and that from this experience of ownership will come your security, your sustainability, and your happiness. Nothing could be further from the truth, as anyone who „owns" many things can tell you."

The New Revelations, N.D. Walsch, pp. 257.

1. INTRODUCTION

The contemporary society is characteristic for an abundance in available products, both material and non-material, that meet a great number of human needs; their consumption is often an end in itself and well-known as materialism and consumerism (O'Shaughnessy & O'Shaughnessy, 2002, Abela, 2006). Such entanglement in material consumption cannot guarantee happiness and life satisfaction to which people naturally aspire. (Dittmar, Bond & Hurst, 2014).

Moreover, living itself in the modern society may also mean being forced to have a job which can often be unsatisfactory, without having enough life quality. This is the reason why there are more and more individuals who wish to give up the strenuous cycle of labour and consumption in order to become self-fulfilled in a different way, through voluntary simplicity (Elgin, 2010, Pierce, 2000). Voluntary simplifiers do not reveal a unique constellation of values and life styles, but they do want to have less material goods and to find themselves in an authentic life through working and feeling fulfilled, being together with other people, becoming aware that they contribute to the environmental protection, and ensuring other forms of self-fulfilment. Such a life style should lead more to well-being and life satisfaction than to orientation towards the values of materialism (Walther, Sandlin & Wuensch, 2016, Lee & Seo Youn Ahn, 2016). The aim of the current paper is to find out whether the population of Croatian young people is oriented more towards material values or there are signs indicating that such values are being abandoned and replaced by a materially simpler way of life free from a strong influence of marketing, as well as to discover the nature of the correlation between material values and life satisfaction on one side, and life satisfaction and the style of voluntary simplicity on the other side. In the first part of the paper the term materialism is defined, along with voluntary simplicity as its alternative. Afterwards, life satisfaction is explained in the context of subjective well-being and related terms. The theoretical part of the paper ends with a survey of literature on the relationship between materialism/voluntary simplicity and some personal well-being measures, that are included because of a variety of measures used by different researchers, although there is also a relative lack of them. In the empirical part of the paper, the relationship between the presented variables is tested with the students of economics in the Croatian context.

2. DEFINING MATERIALISM

Materialism can be seen from several perspectives. According to Richins, materialism is a consumer value, that is, "a value that represents the individual's perspective regarding the role possessions should play in his/her life (Richins, 1994, p. 522)"; so that Ahuvia and Wong (2002) call it personal values materialism. It consists of three components: success, centrality, and happiness. They respectively refer to "the use of possessions to judge the success of others and oneself, the centrality of possessions in a person's life, and the belief that possessions and their acquisition lead to happiness and life satisfaction (Richins 2004, p. 210)". According to Richins and Dawson (1992), materialism is a value that has an impact on choices made by a person with regard to consumption and distribution of resources, including also time. A consumer's personal values are often characterised by the products that are considered the most important in his/her life (Richins, 1994). Belk (1984) sees materialism as consumer orientation, which is called personality materialism by Ahuvia and Wong (2002) since it is oriented towards the system of personality traits. Belk (1984) includes three traits related to materialism: possessiveness, non-generosity, and envy; they respectively represent "our affiliation with these objects, our willingness to give or share the objects in our possession, and our feelings about the objects in others' possession (Belk 1984, p. 292)." Considering consumption, Holt (1995) thinks that how people treat possession is more important than possession itself. Based on the developed typology of consumption practices, materialism is conceptualised as "the consumption style that results when consumers perceive the value inheres in consumption objects rather than in experiences or in other people (Holt 1995, p. 13)." In this case, material consumption is emphasised in comparison to non-material consumption and relationships with other people.

3. VOLUNTARY SIMPLICITY
3.1. Defining voluntary simplicity
In contrast to aspired satisfaction with material goods, there is an individual's decision to simplify his/her life, in other words to get involved in "lifelong processes in which we turn loose of the quest for more wealth, status, and power in favor of an authentic life of inner peace and fulfilment (Pierce 2000, p. 25)." In accordance with Iwata's definition (1997, p. 234), according to which voluntary simplicity includes "lifestyles of low consumption which include material self-dependency", Shama sees it also as a life style of "low consumption, ecological responsibility and self-sufficiency (Shama 1985, p. 57)." However, decreased consumption and orientation towards non-material sources of satisfaction and point of life does not imply having a shortage of material goods but having enough of it to lead a humane and meaningful life, which supports nature in parallel (Gambrel & Cafaro, 2010). Therefore, the key values of voluntary simplicity can be found in material simplicity, human scale which refers to the humanisation of workplace, appropriate technology instead of necessarily high technology, self-determination, i.e. self-sufficiency, ecological awareness, and personal growth (Duane & Mitchell, 1977, Shama, 1985).

3.2. Living voluntary simplicity
Voluntary simplicity can be acquired for different reasons. Motives of voluntary simplicity acquisition can be classified as: personal, social/collective, humanitarian, and ecological (Alexander, 2011); consequently, there are different forms of voluntary simplicity life style (Elgin, 2010). Since voluntary simplicity is manifested in different forms, there are different activities accepted by voluntary simplifiers. Studies have confirmed that voluntary simplifiers often prefer environment-friendly products (Huneke, 2005, Peyer et al., 2016; Ballantine & Creery, 2010), purchase less impulsively (Huneke, 2005; Peyer et al., 2016), give a priority to longer-lasting or second-hand goods, share products and seek self-sufficiency (Ballantine & Creery, 2010), practice recycling, and restrict the time available for watching TV and being exposed to commercials, reduce a number of work hours and choose jobs that lead to satisfaction, avoid rush and participate in community life more (Huneke, 2005). McDonald et al. (2006) state that beginner voluntary simplifiers can start some practices of sustainability, such as recycling or buying fair trade products. One of the phenomena closely related to voluntary simplicity is a different approach to market exchange. According to research conducted by Shaw and Moraes (2009), voluntary simplifiers from rural areas have largely practiced market exchange at the local level, having preferences for local, organic, and vegetarian products. They did not want to leave market completely, but balanced between self-sufficiency on one side and reduced and modified consumption practice on the other side. Therefore, regardless of a tendency towards self-sufficiency which voluntary simplifiers often follow (Ballantine & Creery, 2010), they are usually not willing to leave the market, as also confirmed by research in Germany (Peyer et al., 2016).

4. DETERMINING LIFE SATISFACTION
There may be a problem to define the term itself since life satisfaction is often inconsistently used in literature, also interchangeably with terms such as the quality of life, perceived quality of life, subjective well-being, well-being or happiness (Frisch, 2012). Their demarcation is not unique and depends on applied theoretical approaches. According to Diener (2009), subjective well-being includes "people's long-term levels of pleasant affect, luck of unpleasant affect, and life satisfaction (Diener, 2009, p. 25)." When both components are included it means that a person is simultaneously satisfied with his/her own life and feels well (Veenhoven, 2012), in other words, positive thoughts and emotions prevail in his/her life (Myers & Diener, 1995).

Life satisfaction in the given context represents a "cognitive judgmental process" (Diener et al., 1985, p. 71), which depends "upon a comparison of one's circumstances with what is thought to be an appropriate standard (Diener at al., 1985, p. 71)." Life satisfaction refers to the whole life, that is, to a "global judgment that people make when they consider their life as a whole" (Diener 2009, p. 28)", but also includes certain life aspects (Land, Michalos & Sirgy, 2012, Myers & Diener, 1995).

5. THE EFFECT OF MATERIALISM AND VOLUNTARY SIMPLICITY ON LIFE SATISFACTION

5.1. Materialism and life satisfaction

Despite the fact that material possession has a significant role in the overall satisfaction with life (Leelanuithanit, Day & Walters, 1991), materialism is usually considered in terms of its negative individual consequences (Kilbourne & LaForge, 2010). Dittmar et al. (2014) have conducted a meta-analysis of the relationship between materialism and some personal well-being measures, and found a modest but consistently negative relationship. A negative correlation between materialism and subjective well-being was also confirmed by Burroughs and Rindfleisch (2002), as well as by La Barbera and Gurhan (1997) and Abela (2006) discovered a negative correlation between materialism and life satisfaction. According to Australian research (Ryan & Dziurawiec, 2011), materialistically oriented people show a lower degree of the overall life satisfaction, in several specific life areas. However, Ahuvia and Wong (2002), in their study, discovered a stronger correlation between life satisfaction and personality materialism which includes affect than between life satisfaction and personal values materialism that is oriented towards cognitive beliefs. Speaking about the importance of income, there is a strong relationship between income and subjective well-being when it comes to low income, but it is becoming significantly weaker while people are getting rich (Philips, 2006), that is, income can contribute to subjective well-being through material and non-material benefits until material needs are somewhat fulfilled, but after that they do not only have a significant contribution but can also have negative consequences when one's subjective well-being is discussed (Diener & Biswas-Diener, 2002). Actually, wealth such as health can cause anguish when one is not healthy although being healthy does not guarantee happiness (Myers & Diener, 1995). Starting from the above-stated, the following hypothesis is suggested:
H1: Materialism is negatively correlated with life satisfaction.

5.2. Voluntary simplicity and life satisfaction

According to research by Sherry (2012), voluntary simplifiers show a higher degree of life satisfaction in a larger number of life segments. Walther, Sandlin and Wuensch (2016) have discovered that their happiness and satisfaction are at a higher level in comparison to other consumers, which is differently explained by some researchers. What matters is an approach to the very act of buying in terms of consumption control. In contrast to impulsive purchase, which is a sign of immaturity, lack of control and inability to delay gratification (Tatzel, 2014), economical and thoughtful consumers are happier (Chancellor & Lyubomirsky, 2014). Wishes are endless, and when they are not completely fulfilled, dissatisfaction is possible. Research by Boujbel and D'Astous (2012) has confirmed that a positive relationship between life style and voluntary simplicity is achieved due to a control over one's own wishes, but this only applies to consumers with restricted finances. Consumer motivation also influences satisfaction. Intrinsic aspirations, e.g. self-realisation, personal growth, a sense of belonging to other people and being together with them, are positively correlated with life satisfaction. On the contrary, extrinsic aspirations to, for instance, financial success and other material values are generally in a negative co rrelation with life satisfaction (Stevens, Constantinescu & Butucescu, 2011, Chancellor & Lyubomirsky, 2014). Rich et al. (2016) have confirmed that a correlation between

voluntary simplicity and life satisfaction is completely mediated via psychological needs satisfaction, that is, the experience of autonomy, competence and relatedness, all of them being linked to intrinsic motivation (Deci & Ryan, 2008). Voluntary simplifiers are, thus, more satisfied because they are less dependent on institutions, they feel that they are capable of producing what they need on their own and they share resources. Seeking voluntary simplicity may mean giving up material consumption in favour of non-material one, when experience enables more happiness and leads rather to well-being than to material possession (Carter & Gilovich, 2010, Van Boven, 2005) because, among other things, it meets people's deepest needs for competence, autonomy and togetherness with others (Chancellor & Lyubomirsky, 2014). The acquisition of voluntary simplicity gives people more time for their fellows and activities which cause their satisfaction. A high degree of subjective well-being is surely contributed also by congruency with one's community, affiliation and influence of other people on the life of individuals (Kimweli & Stilwell, 2002). One of the main sources of well-being refers to participation in interesting and attractive work that is even amusing (Myers & Diener, 1995). Therefore, the following hypothesis is suggested:

H2: Voluntary simplicity is positively correlated with life satisfaction.

6. RESEARCH METHODOLOGY

Research was conducted with the sample of 223 second-, third-, forth- and fifth-year students at Dr Mijo Mirković Faculty of Economics and Tourism in Pula, 167 of them being females and 56 males. Their average age was 20.7 years. Materialism was measured with the use of Richins' six-item scale (1987); the first four items refer to personal materialism factor, while the remaining two items refer to compose general materialism factor (Bearden, Netemeyer & Haws, 2011). Iwata's 22-item scale was used for measuring voluntary simplicity. In both measurements, the students were administered the 5-degree Likert scale (from strongly agree to strongly disagree). Life satisfaction was measured through applying the life satisfaction scale (Diener et al., 1985), which included 5 items; the 7- degree Likert scale was used (from strongly agree to strongly disagree).

7. RESULTS

7.1. Data analysis

The exploratory factor analysis and the PLS method were used for testing the hypotheses above. The exploratory factor analysis was conducted with the voluntary simplicity scale since previous studies (Iwata, 2006, Sertoglu, Bozoklu & Korkmaz, 2016) had not shown consistent results with regard to the number of dimensions in the original scale; in one study there were 3 dimensions discovered and in another study there were 6 dimensions found. The results obtained from the exploratory factor analysis confirmed 7 factors, and all of them explained 60.49%, so they are presented in the following table 1. Bartlett´s test of sphericity (Chi square = 1230.09, $p<0.05$), as well as the Kaiser-Meyer-Olkin measure of sample adequacy (KMO = 0.689, KMO>0.5) indicated that it was possible to conduct the factor analysis including the already-mentioned group of variables. The statements with factor loadings below 0.5 on some factors, that is, variables VS1, VS6 and VS8 were excluded from the final results.

Table following on the next page

Factor	Mean	St. dev.	Factor loadings	% explained variance
Factor 1 – Autonomous creation of products	3,42			10,47
VS12	3,22	1,17	0,83	
VS13	3,70	1,00	0,78	
VS14	3,23	1,03	0,88	
Factor 2 – Neglected / Discarded material production	3,27			9,53
VS7	3,25	1,06	0,53	
VS18	3,07	1,02	0,72	
VS19	3,50	1,16	0,55	
Factor 3 – Life simplicity	3,40			9,22
VS9	3,31	1,0	0,58	
VS21	3,57	0,90	0,76	
VS22	3,34	0,88	0,73	
Factor 4 – Long-term use of products	3,89			8,9
VS15	4,07	0,84	0,75	
VS16	3,75	1,06	0,69	
VS17	3,83	0,94	0,50	
Factor 5 – Rational shopping	3,37			8,39
VS2	3,29	0,96	0,73	
VS3	3,44	0,96	0,64	
Factor 6 – Aspiration to self-fulfilment	3,61			7,13
VS4	3,82	0,91	0,79	
VS5	3,40	0,96	0,71	
Factor 7 – Product simplicity	2,72			6,85
VS10	2,60	1,1	0,79	
VS11	2,83	0,83	0,60	

Table 1: Exploratory factor analysis for the voluntary simplicity scale (Source: Authors´calculation)

The confirmed factor structure related to the voluntary simplicity scale was used for conducting the PLS analyses and testing the above-stated research hypotheses.

7.2. Analysis of measurement models

Prior to testing the hypotheses with the use of the PLS-SEM method, it is needed to check the scale reliability and validity, in other words, to check one-dimensionality, convergent and discriminative validity of some theoretical constructs. The PLS-SEM method was applied since, in comparison to the CB-SEM method, it gives better results with smaller samples, is more flexible regarding considerations about the hypothesis which implies the normal distribution of indicator variables. In addition, it is more convenient when the study is aimed at explaining the theory and predicting the target constructs, such is the case here (Hair et al., 2016). SmartPLS 3 software (Ringle,Wende & Becker, 2015) was used for data analysis. Before the measurement models were checked, data were checked on outliers. According to the results obtained after analysing outliers, it cannot be said that values above +/-3 standard deviation from arithmetic means were discovered. All the included constructs were designed according to the specification of measures via reflective measurement models. Reflective measurement models were chosen on the basis of previous studies (Iwata, 2006) and contents of some indicator variables which can presumably replace each other (Jarvis, Mackenzie & Podsakoff, 2003), representing the consequences of some theoretical constructs (Rossiter, 2002). Table 2 shows the results obtained when the reliability and convergent validity of measurement scales was checked. The analysis included neither F2 and F7 constructs of voluntary simplicity because of the low values of C.R. and AVE indicators nor VS9, VS16, M1 and M5 items because of low item loadings (<0.4).

Construct	Item	Original Sample (O)	Sample Mean (M)	Standard Error (STERR)	t-value	C.R.	AVE
Factor 1 – Autonomous creation of products	VS12	0.892*	0.747	0.308	2.898	0.88	0.71
	VS13	0.642*	0.638	0.286	2.244		
	VS14	0.952*	0.782	0.330	2.882		
Factor 3 – Life simplicity	VS21	0.896*	0.872	0.143	6.277	0.85	0.74
	VS22	0.825*	0.785	0.184	4.480		
Factor 4 – Log-term use of products	VS15	0.831*	0.726	0.322	2.582	0.78	0.64
	VS17	0.772*	0.672	0.328	2.356		
Factor 5 – Rational shopping	VS2	0.981*	0.633	0.439	2.237	0.71	0.58
	VS3	0.453*	0.539	0.205	2.210		
Factor 6 – Aspiration to self-fulfilment	VS4	0.722*	0.657	0.314	2.297	0.82	0.70
	VS5	0.932*	0.807	0.314	2.972		
Materialism	M2	0.523*	0.461	0.216	2.419	0.77	0.50
	M3	0.859*	0.803	0.141	6.076		
	M4	0.847*	0.802	0.131	6.485		
	M6	0.435*	0.419	0.209	2.079		
Life satisfaction	LS1	0.824*	0.822	0.047	17.507	0.89	0.61
	LS2	0.779*	0.780	0.063	12.447		
	LS3	0.818*	0.820	0.048	16.977		
	LS4	0.723*	0.719	0.075	9.592		
	LS5	0.761*	0.743	0.057	13.282		
	LS6	0.892*	0.747	0.308	2.898		

Table 2: Item reliability and Convergent validity (Source: Authors' calculations), *p<0.05.

The majority of outer loadings referring to some indicator variables was above 0.7 and was statistically significant at the level of 5%, while the remaining ones ranged from 0.4 to 0.7; since they were statistically significant, they were later used in the analyses. Further, the C.R. and AVE indicators were above suggested 0.7, i.e. 0.5 of the value, indicating the satisfactory level of convergent validity in the case of some constructs. Table 3 presents the results obtained when discriminative validity was checked by using the Fornell Larcker (1981) criterion. Each of the AVE indicator roots in some constructs (matrix diagonal) was bigger than correlations between the stated constructs and all the other model constructs.

	F1	F3	F4	F5	F6	Life satisfaction	Materialism
F1	0.840						
F3	0.207	0.861					
F4	0.242	0.154	0.802				
F5	0.048	0.063	0.130	0.764			
F6	0.083	0.216	0.229	0.142	0.834		
Life satisfaction	0.072	0.174	0.102	0.065	0.111	0.782	
Materialism	-0.009	-0.190	0.075	-0.102	-0.287	-0.256	0.707

Table 3: Discriminative validity - Fornell Larcker criterion (Source: Authors' calculations),

It can be finally concluded that the measured scales present a satisfactory level of internal consistency reliability, convergent and discriminative validity, so it is possible to analyse the structural model.

7.3. Analysis of the structural model

In order to test the given hypotheses and to determine the significance of path coefficients, bootstrapping technique was applied on 5000 sub-samples (as suggested by Hair et al., 2016). The results of the structural model analysis are presented in Table 4.

	Hypotheses	Original sample – standardized coefficient (β)	Arit. mean (M)	Standard error (STERR)	t – values (|β /STERR/)	R^2
H1	F1 -> Life satisfaction_	0.023	0.024	0.107	0.216	0.09
	F3 -> Life satisfaction_	0.109	0.114	0.077	1.418	
	F4 -> Life satisfaction_	0.098	0.105	0.082	1.198	
	F5 -> Life satisfaction_	0.021	0.021	0.101	0.211	
	F6 -> Life satisfaction_	-0.010	0.008	0.081	0.125	
H2	Materialism -> Life satisfaction_	-0.243*	-0.258	0.073	3.312	

Table 4: Analysis of the structural model (Source: Authors' calculations), *p<0.05.

Based on findings obtained from the structural model analysis, all data show that Hypothesis 1 was confirmed because materialism (β = -0,243) had a statistically significant negative influence on life satisfaction. Hypothesis 2 cannot be accepted since no single dimension of voluntary simplicity had a statistically significant impact (p>0.05) on the construct of life satisfaction. On the other hand, life satisfaction was relatively weakly explained by some constructs (R^2 = 0.09). The SRMR indicator was 0.08, indicating a satisfactory level of the model fit (Hu & Bentler, 1998). Since results obtained from the total sample did not indicate an impact of voluntary simplicity on life satisfaction, the existence of unobserved heterogeneity was checked. Namely, although using the SEM analysis implies that collected data come from the homogeneous population, in reality this is not the case, so the PLS-SEM analysis results can be distorted (Becker et. al., 2013). Individuals can differ in their perceptions of some theoretical constructs, and this is the reason why some authors suggest a routine check of the PLS-SEM results on unobserved heterogeneity (Hair, Ringle & Sarstedt, 2011). For these purposes, the FIMIX-PLS technique was first used for determining the existence of different sample segments (Hahn et al., 2002). The FIMIX-PLS procedure is based on the mixture regression concept and, at the same time, evaluates the path coefficients of each observed group for a predefined number of groups (Hair et al., 2016). After determining the optimal number of segments via the FIMIX-PLS technique, the prediction oriented segmentation (PLS-POS) was used for determining whether some participants belonged to the previously-determined segments. The PLS-POS technique is applicable to any sort of PLS path models, regardless of construct classification (reflective or formative); compared to alternative segmentation techniques, it has shown better results in research when it comes to sample segmentation (Becker, Rai & Ringle, 2013). The suggested global model was then evaluated for each individual segment. Table 5 presents the FIMIX-PLS evaluation criteria and relative segment sizes.

S	Akaike´s information criterion (AIC)	Bayesian information criterion (BIC)	Consistent AIC (CAIC)	Normed entropy statistic (EN)	Relative segment sizes			
					s1	s2	s3	s4
2	617.73	668.84	683.83	0.51	0.81	0.19		
3	593.18	671.54	694.55	0.56	0.59	0.33	0.08	
4	575.65	681.27	712.27	0.82	0.70	0.12	0.11	0.07

Table 5: FIMIX-PLS evaluation criteria and relative segment sizes (Source: Authors' calculation)

Results derived from the FIMIX-PLS technique suggested that it was optimal to base further analyses on two segments of participants. In other words, the CAIC criterion which should be, as shown by some researchers (Sarstedt & Ringle, 2010), the main criterion for deciding on the number of segments; it increases with an increase in the number of segments. The EN criterion for two segments is 0.51 and is larger than 0.5, indicating well-separated segments of participants. Finally, the selection of two segments is supported by the relative segment size, which in this case significantly decreases with an increase in the number of segments, disabling the optimal determination of the PLS model in the later stage. For instance, when 3 or 4 segments are in the question, the least relative segment size is 0.08, i.e. 0.07 – in practical terms, irrelevant sizes. These are the results for a two-segment solution. Since POS-PLS was used for the purpose of determining the affiliation of participants to segments, different segment sizes were obtained in comparison to the FIMIX-PLS solution. So, segment 1 and segment 2 included 128 and 95 participants respectively. Table 6 shows results obtained after checking convergent validity.

POS-PLS Segment	Indicators	F1	F3	F4	F5	F6	Life Satisfaction	Materialism
S1	C.R.	0.88	0.84	0.80	0.70	0.81	0.88	0.79
	AVE	0.70	0.72	0.67	0.58	0.68	0.59	0.50
S2	C.R.	0.91	0.43	0.73	0.66	0.74	0.91	0.68
	AVE	0.77	0.43	0.59	0.54	0.61	0.65	0.38

Table 6: C.R. and AVE indicators for the POS-PLS segments (Source: Authors' calculation)

Starting from results in Table 6, it can be concluded that in the case of POS-PLS segment 1 (S1) the requirement for convergent validity was met for each scale with regard to some constructs, while in the case of POS-PLS segment 2 this requirement was not met for constructs F3, F5 and Materialism (C.R.<0.7 and AVE < 0.5). Discriminant validity was checked by using the Fornell Larcker criterion although it is not presented here because of the space limitation, so it was confirmed that each scale did meet this requirement. It is not possible to be quite specific about the reasons that led to worse indicators in the case of POS-PLS segment 2 (S2) when the current study is in the question; is it because of the applied methodology or the collected data? It is, thus, needed to conduct future research, related to the applied scales, on other samples, which will be further discussed in the section where the limitations of the current paper are explained. In this case, what is stated above is not important so much since the aim of additional analysis was to determine whether there was a critical level of unobserved heterogeneity in data that should be taken into account according to the conducted analysis. The PLS analysis findings should be, therefore, interpreted across consumer segments (because of the existence of unobserved heterogeneity), not in the total of collected data. According to the methodology for testing unobserved heterogeneity, the PLS-POS analysis results should have additionally been related to some variables with which it should be possible to achieve a roughly equal classification of participants into segments on the basis of the PLS-POS analysis (Sasrstedt et al., 2010). In this case, it was not done since the questionnaire applied as an instrument was short.

Table following on the next page

	Hypotheses	Original sample – standardized coefficient (β) S1	Standard error (STERR) – S1	t – values S1	Original sample – standardized coefficient (β) S2	Standard error (STERR) –S2	t – values S2
H1	F1 -> Life satisfaction _	0.225*	0.059	3.809	-0.053	0.087	0.613
	F3 -> Life satisfaction _	0.139*	0.069	2.000	-0.148	0.125	1.178
	F4 -> Life satisfaction _	0.401*	0.066	6.111	-0.560*	0.081	6.896
	F5 -> Life satisfaction _	-0.308	0.127	2.426	0.746*	0.075	9.964
	F6 -> Life satisfaction _	0.148*	0.069	2.152	-0.104	0.100	1.039
H2	Materialism -> Life satisfaction _	-0.298*	0.055	5.460	0.044	0.108	0.410
R^2 –S1		0,56					
R^2 –S2		0,69					
SRMR – S1		0,088					
SRMR -S2		0,12					

*Table 7: Path coefficients of the structural model for POS-PLS Segment 1 and Segment 2 (Source: Authors' calculations), *p<0.05*

Results for S1 voluntary simplicity dimensions showed that F1 (β_{S1}=0.225), F3 (β_{S1}=0.139), F4 (β_{S1}=0.401), and F6 (β_{S1}=0.148) had a positive statistically significant impact (p<0.05) on life satisfaction. Dimension F5 (β_{S1}= -0.308) had a significantly negative statistical impact on life satisfaction. Materialism had a significantly negative statistical impact on life satisfaction (β_{S1}= -0.298). R^2 for S1 increased in comparison to the global model and was 0.56, which additionally indicates that unobserved heterogeneity should be seriously considered. Since the requirement for convergent validity was not met, results for S2 cannot be properly interpreted, but they suggest results completely different than those for S1.

8. DISCUSSION
All the research findings should be interpreted in the context of today's orientation towards materialism and inclination to a voluntary simplicity life style, which probably cannot be

acquired by young people at that age, only by rare individuals perhaps, but they rather show an aspiration to such a life style, which cannot be fully developed until they have experienced a more complete satisfaction with material fulfilment. Yet, considering the sample validity, it is not advisable to underestimate this population because nowadays young people become oriented towards the market exchange in their early age and have their own attitudes to this. Results confirmed that the participants considered a wish for fulfilment as very significant, that is, they do not pay much attention to material wealth and aspire to non-material forms of consumption and mental growth, which is characteristic for individuals who acquire voluntary simplicity. This was supported by a relatively high value of statements which regarded a wish to have a simple life, as they stated. This finding confirms that young people show a tendency to voluntary simplicity, and whether or not they will be real voluntary simplifiers in the future depends on their future circumstances. The long-term use of products is what the participants considered the most important, which coincides with what voluntary simplifiers practise. This result may also indicate a behaviour that is influenced by the economic situation in Croatia, where an average young person is simply not able to often change purchased products. This type of behaviour is, however, favourable from ecological viewpoints, as well – useless objects are not purchased and used objects are not thrown away. The worst evaluation referred to statements that were related to the simplicity of used products, which can be seen as consumers' wish to use the possibilities of modern technologies, in other words, they do not neglect products with more complex functions and technology-brought comfort. This should not be opposite to the acquisition of voluntary simplicity since technology also exists to serve consumers and discarding technology may mean a return to more primitive forms of fulfilling needs, which must not be positive. One of the fundamental research results referred to the fact that participants were significantly more oriented towards the life style of voluntary simplicity and aimed to this much more than to materialism (grade 3.38 compared to 2.61). Materialism was correlated with a lower degree of life satisfaction, which supports many previous studies according to which materialism cannot be a source of life satisfaction, while a tendency to voluntary simplicity does not lead to a higher degree of life satisfaction that would be statistically confirmed. The participants probably do not see important advantages of having a different approach to consumption. Speaking about the sample heterogeneity and the conducted statistical analysis, it was confirmed in one of two participant groups that materialism with an average value of 2.87 had a negative influence on life satisfaction, but also that a tendency to voluntary simplicity (value 3.40) had a positive influence on life satisfaction. This can surely indicate a strong shift from material values in the researched population in which young people obviously do not find any more satisfaction to merely possess goods and rush to achieve satisfaction through consuming material goods, but tend to acquire the life style of voluntary simplicity. Taking into account the total sample and the group which is trying with more effort to acquire voluntary simplicity with regard to material values, it can be seen that this was most supported by the materialism scale statement related to one's wish to possess enough finances to be able to purchase anything desirable. Therefore, it is possible to recognise young people's aspiration to reach certain level of material standard despite everything; after that, unnecessary consumption can be discarded. According to some factors, self-sufficiency in terms of product purchase, life simplicity, long-term use of products and aspiration to self-fulfilment positively influenced life satisfaction in this group. All this suggests that they are inclined to self-sufficiency when it comes to the purchase of products, both food and other things, they show their wish and tendency to have a simple life in terms of material goods, they do not follow fashionable trends and purchase new products without any control, but they rather give a priority to the duration of products and show that their aim is to prioritise intrinsic motives, which also has a positive influence on life satisfaction. Rational behaviour in shopping situations does not positively influence life satisfaction, but even has a negative impact.

Therefore, the very act of shopping can be a factor of one's satisfaction in his/her consumption behaviour, that is, being rational in shopping situations does not always need to be a source of satisfaction. The research finding for this segment was confirmed for the total sample; according to this, young people have an aspiration to non-material fulfilment and spiritual growth, and behave in a strongly rational way when it comes to purchase products, and also show a tendency to self-sufficiency, which suggests the recognition of negative sides of consumerism and the wish to give their life meaning due to true and more enduring values they acquired in the process of market economy maturation, as well as probably thanks to their family circumstances.

9. LIMITATIONS OF THE PAPER AND FUTURE RESEARCH

The conducted research has several limitations that can be taken into account as a foundation for future studies. While some studies, aimed at measuring an impact of voluntary simplicity on life satisfaction, have included adult participants of all population (Rich, Hanna & Wright, 2016) or voluntary simplifiers and other populations (Boujbel & D'Astous, 2012, Sherry, 2012), the current study included students. Voluntary simplicity is usually acquired after certain life goals have been reached, when people have realised that the cycle of working and consuming material goods does not represent true life fulfilment. Therefore, this paper is focused on the level of materialism and the tendency to voluntary simplicity that can still be recognised in this group of participants, as well. Namely, the characteristics of voluntary simplicity in students have been recognised in a study by Iwata (2006), whose measurement scale was used here. The current study, however, did not confirm previous research findings with regard to dimensions of the scale considering a voluntary simplicity life style, the same one which generated different dimensions in different studies (Iwata, 1997, Sertoglu, Bozoklu & Korkmaz, 2016). This study indicates a weakness of using this particular scale, which does not properly reflect the spirit of voluntary simplicity, but is seen rather as an antithesis to materialistic shopping and consuming behaviour. But it is also possible to ask whether there is a scale which completely reflects a sense of voluntary simplicity although there are other scales that were not used here (Leonard-Barton & Rogers, 1980, Shama & Wisenblit, 1984). Future research might be, thus, oriented towards the development of such a scale that could explain voluntary simplicity better. In this way, it is possible to obtain more reliable research results regarding the influence of some voluntary simplicity aspects on life satisfaction. Since the measurements used here include self-report scales, it is important to observe that these scales are not completely protected from biases. In this case, the most important is social desirability bias, which describes a tendency to react in such a manner to emphasise socially desirable characteristics, for instance, not to pay much attention to material consumption, and also to hide socially unfavourable characteristics (Maccoby & Maccoby, 1954), e.g. impulsive shopping. Despite this, and due to a lack of objective measurements, even when results can be partially explained as a consequence of this desirability bias, it might be still concluded that the importance of acquiring voluntary simplicity was evaluated as socially positive, in comparison to materialism. Considering the fact that the current sample included only students, future research should include different participants. It would surely be appropriate to study a group of voluntary simplifiers, excluded here, since there is no Croatian database with which this group could be identified. It would be useful to compare voluntary simplifiers with other population, which may lead to interesting findings. The current study confirmed the existence of unobserved heterogeneity, that is, the heterogeneity of researched population, which may have an impact on the validity of research results. It is also important to introduce objective measurements, such as economic resources, that might have an influence on participants' answers. They can be operationalised in the form of individual's income or family income when students are considered. This kind of data might additionally explain a part of the obtained

results. For instance, in the case of negative relationship between economic resources and rational behaviour in shopping situations (a person with lower income might be more motivated to take care of consumption), it would be possible to reinterpret the negative relationship between life satisfaction and rational consumption by turning rational consumption into a mediator of the relationship between economic resources and life satisfaction. Therefore, it seems good to study the characteristics of participants in relation to their socio-demographic variables and features of cultural values in their parents or peers as potential sources of unobserved heterogeneity, especially their relationships with the objective measurements of economic resources both at the individual and family level.

LITERATURE:

1. Abela, A.V. (2006). Marketing and Consumerism: A Response to O'Shaughnessy and O'Shaughnessy. *European Journal of Marketing*, *40*(1/2), p. 5-16.
2. Ahuvia, A.V., & Wong, N.Y. (2002). Personality and Value Based Materialism: Their Relationship and Origins. *Journal of Consumer Psychology*, *12*(4), p. 389-402.
3. Alexander, S. (2011). Property Beyond Growth: Toward a Politics of Voluntary Simplicity. Doctoral Dissertation, January 2011, Faculty of Law, University of Melbourne, Retrieved: 20.02.2017. from http://simplicityinstitute.org/sauel-alexander
4. Ballantine, P.W., & Creery, S. (2010). The consumption and disposition behaviour of voluntary simplifiers. *Journal of Consumer Behaviour*, *9*(1), p. 45-56.
5. Bearden, W.O., Netemeyer, R.G., & Haws, K.L. (2011). *Handbook of Marketing Scales*. Thousand Oaks: SAGE Publications.
6. Becker, J.-M., Rai, A., Ringle, C. M., & Voleckner, F. (2013). Discovering unobserved heterogeneity in structural equation models to avert validity threats. *MIS Quarterly*, 37, p. 665-694.
7. Belk, R.W. (1984). Three Scales to Measure Constructs Related to Materialism: Reliability, Validity, and Relationships to Measures of Happiness. *Advances in Consumer Research*, 11(1), p. 291-297.
8. Boujbel, L., & D'Astous, A. (2012). Voluntary simplicity and life satisfaction: Exploring the mediating role of consumption desires. *Journal of Consumer Behaviour*, *11*(6), p. 487-494.
9. Burroughs, J.E., & Rindfleisch, A. (2002). Materialism and Well-Being: A Conflicting Values Perspective. *Journal of Consumer Research*, *29*(3), p. 348-370.
10. Chancellor, J., & Lyubomirsky, S. (2014). Money for Happiness: The Hedonic Benefits of Thrift. In M. Tatzel (Ed.), *Consumption and Well-Being in the Material World*. (p. 13-48). New York, NJ: Springer Science+Business Media Dordrecht.
11. Deci, E.L., & Ryan, R.M. (2008). Facilitating Optimal Motivation and Psychological Well-Being Across Life's Domains. *Canadian Psychology*, *49*(1), p. 14-23.
12. Diener, E., & Biswas-Diener, R. (2002). Will Money Increase Subjective Well-Being? A Literature Review and Guide to Needed Research. *Social Indicators Research*, *57*(2), p. 119-162.
13. Diener, E., Emmons, R.A., Larsen, R.J., & Griffin, S. (1985). The Satisfaction With Life Scale. *Journal of Personality Assessment*, *49*(1), p. 71-75.
14. Dittmar, H., Bond, R., Hurst, M., & Kasser, T. (2014). The Relationship Between Materialism and Personal Well-Being: A Meta-Analysis. *Journal of Personality and Social Psychology*, *107*(5), p. 879-924.
15. Duane, E., & Mitchell, A. (1977). Voluntary Simplicity. *The Co-Evolution Quarterly*, Summer, p. 1-40.
16. Elgin, D. (2010). *Voluntary Simplicity*. New York, NJ: HarperCollins Publishers.

17. Fisher, R. (1993). Social desirability bias and the validity of indirect questioning. *Journal of Consumer Research, 20*(2), p. 303-315.
18. Fornell, C., & Larcker, F. D. (1981). Evaluating Structural Equation Models with Unobservable Variables and Measurement Error. *Journal of Marketing Research*, *18*(1), p. 39-50.
19. Gambrel, J.C., & Cafaro, P. (2010). The Virtue of Simplicity. *Journal of Agricultural and Environmental Ethics*, *23*(1-2), p. 85-108.
20. Hahn, C., Johnson, M. D., Hermann. A., & Huber, F. (2002). Capturing customer heterogeneity using a finite mixture PLS approach. *Schmalenbach Business Review*, 54, p. 243-269.
21. Hair, J. F., Ringle, C. M., Sarstedt, M. (2011). PLS-SEM: Indeed a silver bullet, *Journal of Marketing Theory and Practice*, *19*(2), p. 139-151.
22. Hair, J.F., Hult, M. T., Ringle, M. C., & Sarstedt, M. (2016). *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)*. Thousand Oaks: SAGE Publications.
23. Holt, D.B. (1995). How Consumers Consume: A Typology of Consumption Practices. *Journal of Consumer Research*, *22*(1), p. 1-16.
24. Hu, L.T. & Bentler, P.M. (1998). Fit indices in covariance structure modeling: Sensitivity to underparameterized model misspecification, *Psychological methods*, *3*(4), p. 424-453.
25. Huneke, M.E. (2005). The Face of the Un-Consumer: An Empirical Examination of the Practice of Voluntary Simplicity in the United States. *Psychology & Marketing*, *22*(7), p. 527-550.
26. Iwata, O. (1997). Attitudinal and Behavioral Correlates of Voluntary Simplicity Lifestyles. *Social Behavior and Personality*, *25*(3), p. 233-240.
27. Iwata, O. (2006). An Evaluation of Consumerism and Lifestyle As Correlates of a Voluntary Simplicity Lifestyle. *Social Behavior and Personality*, *34*(5), p. 557-568.
28. Jarvis, C. B., MacKaenzie, S. B., & Podsakoff, P.M. (2003). A critical review of construct indicators and measurement model misspecification in marketing and consumer research, *Journal of Consumer Research*, *30*(2), p. 199-218.
29. Kilbourne, W.E., & LaForge, M.C. (2010). Materialism and Its Relationship to Individual Values. *Psychology & Marketing*, *27*(8), p. 789-798.
30. Kimweli, D.M.S., & Stilwell, W.E. (2002). Community Subjective Well-Being, Personality Traits and Quality of Life Therapy. *Social Indicators Research*, *60*(173), p. 193-225.
31. La Barbera, P.A., & Gurhan, Z. (1995). The Role of Materialism, Religiosity, and Demographics in Subjective Well-Being. *Psychology & Marketing*, *14*(1), p. 71-97.
32. Land, K.C., Michalos, A.C., & Sirgy, M.J. (2012). Prologue: The Development of Research on Social Indicators and Quality of Life (QOL). In K.C. Land et al. (Eds.), *Handbook of Social Indicators and Quality of Life Research* (p. 1-22). New York, NJ: Springer Science+Business Media B.V.
33. Lee, M.S.W., & Ahn, C.S.Y. (2016). Anti-Consumption, Materialism, and Consumer Well-Being. *The Journal of Consumer Affairs*, *50*(1), p. 18-47.
34. Leelanuithanit, O., Day, R., & Walters, R. (1991). Investigating the Relationship between Marketing and Overall Satisfaction with Life in a Developing Country. *Journal of Macromarketing*, 11(1), p. 3-23.
35. Leonard-Barton, D., & Rogers, E.M. (1980). Voluntary Simplicity. *Advances in Consumer Research*, 7, p. 28-34.
36. Maccoby E. E., Maccoby N. (1954). The interview: a tool of social science. In Lindzey G. (Ed.), *Handbook of social psychology,* (p. 449-487), Cambridge, MA: Addison-Wesley.
37. McDonald, S., Oates, C.J., Young, C.W., & Hwang, K. (2006). Toward Sustainable Consumption: Researching Voluntary Simplifiers. *Psychology & Marketing*, 23(6), p. 515-534.

38. Myers, D.G., & Diener, E. (1995). Who is Happy?. *Psychological Science*, 6(1), p. 10-19.
39. O'Shaughnessy, J., & O'Shaughnessy, J.N. (2002). Marketing, the consumer society and hedonism. *European Journal of Marketing*, *36*(5/6), p. 524-547.
40. Peyer, M., Balderjahr, I., Seegebarth, B., & Klemm, A. (2016). The role of sustainability in profiling voluntary simplifiers. *Journal of Business Research*, *70*(1), p. 37-43.
41. Phillips, D. (2006). *Quality of Life: Concept, Policy and Practice*. New York, NJ: Routledge.
42. Pierce, L.B. (2000). *Choosing Simplicity*. Carmel: Gallagher Press.
43. Rich, S.A., Hanna, S., & Wright, B.J. (2016). Simply Satisfied: The Role of Psychological Need Satisfaction in the Life Satisfaction of Voluntary Simplifiers. *Journal of Happiness Studies*, 18(1), p. 89-105.
44. Richins, M.L. (1994). Special Possessions and the Expression of Material Values. *Journal of Consumer Research*, *21*(3), p. 522-533.
45. Richins, M.L. (2004). The Material Values Scale: Measurement Properties and Development of a Short Form. *Journal of Consumer Research*, *31*(1), p. 209-219.
46. Ringle, C. M., Wende, S., & Becker, J.-M. (2015). SmartPLS 3. Boenningstedt: SmartPLS GmbH. http://www.smartpls.com
47. Rossiter, J. R. (2002). The C-OAR-SE procedure for scale development in marketing. *International Journal of Research in Marketing*, *19*(4), p. 305-335.
48. Ryan, L., & Dziurawiec, S. (2011). Materialism and Its Relationship to Life Satisfaction. *Social Indicators Research*, *55*(2), p. 185-197.
49. Sarstedt, M., & Ringle, M. C. (2010). Treating unobserved heterogeneity in PLS path modeling: a comparison of FIMIX-PLS with different data analysis strategies. *Journal of Applied Statistics*, *37*(8), p. 1299-1318.
50. Sertoglu, A., E., Bozoklu, C.P., & Korkmaz, S. (2016). Voluntary Simplicity, Values and Lifestyles: a Case of Ankara-Turkey. Retrieved: 21.02.2017. from http://www.marketing-trends-congress.com/archives/2016/pages/PDF/ERMEC.pdf
51. Shama, A., & Wisenblit, J. (1984). Values of Voluntary Simplicity: Lifestyle and Motivation. *Psychological Reports*, *55*(1), p. 231-240.
52. Shaw, D., & Moraes, C. (2009). Voluntary simplicity: an exploration of market interactions. *International Journal of Consumer Studies*, *33*(2), p. 215-223.
53. Sherry, T. (2012). The Life satisfaction of Voluntary Simplifiers: Is Low Materialism a Path to Happiness? Thesis. The Ohio State University and OhioLINK. Retrieved: 21.02.2017. from https://etd.ohiolink.edu/pg_10?0::NO:10:P10_ACCESSION_NUM:osu1342210577
54. Stevens, M.J., Constantinescu, P.-M., & Butucescu, A. (2011). Aspirations and wellbeing in Romanian and US undergraduates. *International Journal of Psychology*, *46*(6), p. 436-445.
55. Tatzel, M. (2014). Value Seekers, Big Spenders, Non-Spenders, and Experiencers: Consumption, personality, and Well-Being. In M. Tatzel (Ed.), *Consumption and Well-Being in the Material World*, (p. 75-108). Springer New York, NJ: Science+Business Media Dordrecht.
56. Van Boven. (2005). Experientialism, Materialism, and The Pursuit of Happiness. *Review of General Psychology*, *9*(2), p. 132-142.
57. Veenhoven, R. (2012). Happiness, Also Known as 'Life Satisfaction' and Subjective Well-Being?. In K.C. Land et al. (Eds.), *Handbook of Social Indicators and Quality of Life Research,* (pp. 63-78). New York, NY: Springer Science+Business Media B.V.
58. Walther, C.S., Sandlin, J.A., & Wuensch, K. (2016). Voluntary Simplifiers, Spirituality, and Happiness. *Humanity & Society*, *40*(1), p. 22-42.

SPILLOVER EFFECTS BETWEEN MONETIZATION, FINANCIAL DEVELOPMENT AND PUBLIC DEBT IN RELATION WITH UNEMPLOYMENT IN CROATIA

Ante Samodol
Libertas International University, Croatia
asamodol@libertas.hr

Sonja Brlecic Valcic
Libertas International University, Croatia
sbrlecic@libertas.hr

ABSTRACT

The impact of monetization of economy as well as of financial development and the stability of the financial sector on economic growth have been subject of numerous studies. Most of the contemporary research carried out on this topic has shown the existence of strong nonlinear relationships between the mentioned factors. Using empirical data this study aims to analyse the impact of monetary and fiscal policy, as the two key leverages of economic policy, on unemployment. As in previous studies, based on statistical methods, but also by the use of self-organizing neural networks, the correlation and non-linearity of these relations has been proven. Research findings suggest that the annual growth rate of money supply is in positive correlation with the unemployment rate, while the indicators of the development of the financial sector and the annual growth rate of credit to the private sector are negatively correlated with the unemployment rate in the Republic of Croatia. The share of general government debt in GDP is positively correlated with unemployment, but the annual growth rate of general government debt is negatively correlated with unemployment. It is also possible to notice the spillover effects between M1 variables on Gross debt and M1 / GDP on Loans / GDP and Loans / GDP on Gross debt / GDP. The paper presents conclusions on the correlation and spillover effects between observed independent variables and proposes a methodology for modelling the nonlinearity of such relations.
Keywords: Financial Development, GDP, Monetization, Public Debt, Unemployment

1. INTRODUCTION

The varied macroeconomic stability of Central and Eastern European countries, primarily with regards to budget deficit (Croatia, Lithuania, Romania, Slovenia, Slovakia) and public debt (Croatia, Lithuania, Hungary), proves that these countries are facing problems that might threaten their internal stability, consequently leading to the destabilisation of the region (Pera, 2016, pp 69-92). These issues are related mainly to continuous turbulent time periods of European countries as consequence of a range of factors since the beginning of the 2007 crisis, the key of which Pera mentions (2016) in his study as: violating the criteria of convergence and fiscal discipline, problems with liquidity of international financial markets, depreciation of the euro, increase of unemployment, slow productivity growth, increased borrowing by the public finance sector, as well as the correlation between efficacy and unemployment. It is, therefore, essential to observe the interrelation of Financial Development, GDP, Monetization, Public Debt and Unemployment primarily within the context of macroeconomic stability, but also within the highly related context of faster development of these countries. The level or degree of monetisation is conditioned primarily on the monetary policy of the central bank according to the size of monetary aggregates. Certainly, the size of monetary aggregates differs in relation to expansive and restrictive monetary policy. In the last decades, the monetary policy of Central and Eastern European countries has faced financial and banking crises, privatisation cycles and

various reforms that have had a direct impact on the level of public debt. On the other hand, the financial sectors in these countries have traditionally been oriented to banks, and the domination of banks caused a continuous optimisation of monetary policy and regulation. Lending and bank loan structure directly affected economic activity and growth. In Croatia, private sector loans in relation to GDP became the dominant indicator of financial development, while the stock exchange turnover in relation to GDP had mostly secondary indicative significance. Public debt, especially the expansion and financing of domestic government debt often limited the availability of funds to the private sector in the financial and capital markets. The 2008 financial crisis emphasised the structural debility of the Croatian real sector and the exposure to bank loans and decreased economic activity led to the levelling of businesses and households, with banks engaging in bad loan sales. At the same time, the government continued with increased borrowing and public debt financing (despite the cumulative GDP decrease by 13% in the 2008 – 2015 period). The financial crisis, taxation of households and businesses and the great economic crisis strongly impacted the movement of the unemployment rate that reached over 17% in 2015. Therefore, through the Croatian experience, this paper researches, through regression models, the effect of earning, financial development and general public debt as independent variables in the rate of unemployment as a dependent variable. The spillover effects of individual observed variables are described in the theoretic part of this paper, while based on conclusions drawn from the results of the established models, we bring forth guidelines for future research, primarily in relation to the modelling of non-linearity of observed relations.

2. THE THEORETICAL APPROACH
2.1. Monetization, financial development and government gross debt
The monetization plays a special role in the accumulation of capital. Besides, general monetization and founding of banks are the first steps after which sophisticated financial institutions and markets appear (Rousseau, D'Onofrio, 2013, pp 132-153). It can also be an important political goal because it represents the key element of the financial sector, which, in turn can become a powerful driving force behind maintaining and acceleration of economic development (Kar, M., Pentecost, E.J., 2000). Thus, the level of monetization can be used for an overview of the development situation of the financial sector and the possibility of development of economic policy through observing the movements of factors that constitute it and those that affect it for several reasons. The first one regards the fact that the analysis of several-year trends of earning identifies the periods of demonetization and remonetization, which are connected to the growth rates of money supply or changes in the nominal GDP. Secondly, the analysis of the relationship between monetary aggregates and GDP enables the ability to use numerous independent variables that affect retroactive monetary aggregates and GDP. Thus, for example, besides the impact of monetization on deposits and loans, it is possible to connect the effect of deposit and loan movements, as sources of creating and using banks' lending potential, with monetary aggregates (M1) or GDP. It is known that, within the allowed monetary policy, the creation of bank deposits and bank loans, the usage of crediting increases M1 by the process of multiplication. Therefore, the increase in real M1 balance can serve as the basic value in less financially developed economies, i.e. if M1 reflects the basic earnings that enable individuals to accumulate capital and overcome earned investment income, it is possible to find countries that begin with low levels of financial development, but make the best use of M1 expansion (Rousseau, D'Onofrio, 2013, pp 132-153). Thirdly, the inversion of this indicator can monitor the velocity of money. However, it should be pointed out that, along with emphasising the importance of monetization, when measuring and using it in the creation of conclusions and policies, there is a risk of the onset of a period of monetization stagnation, financial deepening and even demonetization, with negative effects on growth.

The biggest issue that emerges from analysing factors of monetization and its relation to GDP, as well as the impact of monetization on components of economic and social growth is that by selecting a „real" monetization indicator, and consequently the financial system development, there is no consensus, regardless of all research conducted thus far. For example, older research (Lynch, 1996, pp 3-33) point out that the development of the financial sector through unifying fragmented financial markets represents a permanent process regardless of the development level of a country in which it takes place. It is finally represented in the total of internally consistent prices of all financial markets. The price differences are considerable in the early phase of financial development, i.e. price setting on a wide level through considerable amounts of interests on deposits and loans in the early phase of development should be represented by a mechanism through which the development of the financial sector could promote economic growth. From these grounds the financial development moves toward financial markets that gradually adjust financial prices, also including product development with valuable characteristics of liquidity and risk management, thus enhancing the contribution of the financial sector to economic development. However, in some cases, monetary aggregates, especially narrow money aggregates can be very weak indicators of the volume of financial development. De Gregorio and Guidotti (1995) point to the use of less liquid monetary aggregates (M2 or M3 / GDP) as proxy for financial development. The M2/GDP ratio is used by both IMF and World Bank in order to show the level of earning of individual countries. Money supply (M2), however, debilitates (promotes) long-term economic growth in absence (presence) of institutional quality (Kutan, A.M., 2017, pp 228-248). Some research considers the indicator M2 reduced by circulating money in relation to the GDP the best indicator of monetization because circulating money does not affect bank lending and depositing activities, thus it does not contribute to the development of the financial system (Abu-Bader, Abu-Qarn 2005, pp 1-36). The earnings ratio, measured as the relation of broad money and nominal GDP, is connected in some research with macroeconomic and demographic factors, as well as financial sector reforms (McLoughlin, Kinoshita, 2012). The measuring of the effectiveness of monetary policy cannot be clear without an in-depth understanding of the effects of financial infrastructure, competitiveness of financial markets and current economic conditions. More specifically, the effectiveness of monetary policy depends on the extent to which the selected interest rate affects all other financial prices, including the entire structure of interest rates, exchange rates and real estate prices (Avci, Yucel, 2017, pp 179-213). The deepening of the financial sector is a means to economic growth; therefore, it is useful to conduct an analysis of real variables that can show the effects of financial indicators more directly (Capolupo, 2018. pp 145-185). The interaction of economic growth and the development of the financial sector have been empirically proven in plenty of research such as (Beck at al 2002) and (Carlin, Mayer 2003, pp 191-226). Research results depend on whether the financial sector is more oriented toward banks or the market. Consequently, the size of the market and types of financial intermediaries affect research results. Arestis (2005), who points to the research model McKinnon / Shaw, i.e. the hypothesis that savings precede investment, notices that savings cannot finance the accumulation of capital, but it affects the banking sector that provides loans for investment without the necessary increase in the deposit size. The same author concludes that in modern banking loans create deposits and not the other way around. According to the Maastricht Agreement, the general government gross debt as an indicator is defined as the amount of gross debt in its nominal value at the end of the year in the following categories of government liabilities (ESA2010): currencies and deposits and debt securities and loans. The general government sector consists of subsectors: central government, government authority, municipal self-government and social security funds. The share of the general government gross debt in relation to GDP shows on the one hand the efficacy of the fiscal policy (through taxation policy and debt management), and on the other hand the efficacy of national economy through

GDP movement. In relation to the former, with respect to regional debt movement, especially in countries within monetary unions, it is necessary to observe the issue from two aspects: 1) debt is only a request for future tax income and 2) the increase of debt, such as issuing currency without coverage, leads to inflation processes (Rousseau, D'Onofrio, 2013, pp 132-153). In relation to the efficacy of national economy through GDP movement, the latest research indicates that financial policies need to be conceptualised according to the priorities of the industry policies. (Yulek, Murat, 2017, pp 1390-1405). Considering everything above mentioned in the context of Croatia, the research conducted on data from Central and Eastern European countries shows that in case of breaching acceptable caps in terms of current account balance, net international investment position, export market share, nominal labour unit cost, real estate price, private sector debt, government debt and unemployment rate, the imbalance in the eight indicators can represent an unfavourable macroeconomic environment contributing to the emergence of intense crises (Pera, 2016, pp 69-92).

2.2. Unemployment

The effect of fluctuating business cycles on the results of unemployment is more pronounced in countries with budget deficits, and even more so in countries under adaptation programmes (Spain, Ireland, Italy, Portugal), perhaps underlining their greater vulnerability and slow pace of adapting to changes in macroeconomic dynamics. A stronger increase in GDP might contribute positively to the increase in real disposable income and domestic demand, leading to an increase in job vacancies and decreasing the level of redundancy (Papapetrou, Tsalaporta, 2017, pp 466-490). Unemployment is generally observed as the consequence of economic and social trends, but also the effects of labour market reforms on employment and economic growth. According to the IMF (World Economic Outlook, 2016), the legal facilitation of dismissing is not statistically significant in the increase of employment and enhancement of other macroeconomic variables. The conclusion is that reforms have a positive effect on all employees in terms of economic growth and strong economy, and not weak economic conditions. Likewise, it has been proven that a reform or a decrease in unemployment benefits during crisis have a weak and statistically insignificant effect. Decreasing benefits decreases expenditure and increases savings as a precautionary measure (Whang, 2015). In addition, since the movement of the number of jobs in recession through limiting growth incentives and reducing benefits is not effective (Landais, et al 2015), the key issue is whether macroeconomic effects can compensate for short-term costs of labour and unemployment benefits by increasing total demand, higher employment rate and less redundancy. Croatia has had a long-term problem in high, regularly two-figure unemployment rate with an extremely high rate of youth unemployment. At the end of 2016 according to Eurostat, Croatia held the third place in the EU with an unemployment rate of 13.1% (31.1% youth), right after Spain with an unemployment rate of 19.9% (44.4%) and Greece in the leading position with 23.6% (47.3%). According to Eurostat, the Croatian unemployment rate is the highest among the so-called „new" EU member states.

3. METHODOLOGY AND DATA SAMPLE

For the initial M1, credit and debt rate and subsequent M1 / GDP, Loans / GDP and Gross debt / GDP to Unemployment, the classic linear regression and Kohonen's self-organizing maps (Kohonen, 1987) were used in two selected set of data. The linear regression in the observation of influence is chosen for the purpose of determining the difference of linearity / nonlinearity and the cause of its existence / absence. Using a simple linear regression model, the relationship between only two variables is studied. The equation of such a model has the following form

$$Y_i = \alpha + \beta X_i + \varepsilon_i, i = 1, 2, \ldots, n, \tag{1}$$

where Y represents the dependent variable, and X is an independent variable, while α i β are unknown parameters to evaluate, and ε is a stochastic variable representing unsystematic impacts on the dependent variable and is referred to as a relationship error.

Kohonen's Self-Organizing Maps (SOMs) are one of the most commonly used classifying neural networks in solving clustering problems not only because of extraordinary clustering features but also very useful visualization tools that simplify the analysis of observed clusters. In addition to the input and output layer of this network there is also a hidden so-called competitive self-organizing layer in which the neurons are deployed into the appropriate network that determines the so-called "topology" of SOM. Such topology allows the hidden layer to form the visualization of the distribution and the two-dimensional approximation of the topology of the input set of vectors (Brlečić Valčić, 2016, pp 241-256).

In the hidden self-organizing layer, a vector $\mathbf{n}_{m\times 1}^1$ is formed first of which the coordinates of form $n_i^1 = -\left\| \mathbf{IW}_{1\times n}^i - \mathbf{p}_{n\times 1} \right\|$ represent the negative (ndist) Euclidean distance between the represented vector $\mathbf{p}_{n\times 1}$ and vector $\mathbf{IW}_{1\times n}^i$ representing i row of weight coefficient matrices $\mathbf{IW}_{m\times n}$. (2)

The 2D topology of the network is self-organized through 200 iterations with 20 neurons in the hidden layer. The selected set of data for analysis of the impact of M1, the loan rate and the debt rate on unemployment is shown in Table 1, and the analysis of the impact of indicators M1 / GDP Loans / GDP and Gross debt / GDP on unemployment in Table 2.

Table 1: Data for analysis of the impact of M1, the loan rate and the debt rate on unemployment

Y	Unemployment	M1	Loans	Gross debt
1996	10	38.06	2.97	61.68
1997	9.9	20.78	44.30	10.09
1998	11.4	-1.47	22.59	6.62
1999	13.6	2.38	-7.03	34.29
2000	16.1	30.12	8.95	31.99
2001	15.8	31.43	23.08	14.31
2002	14.8	30.24	29.63	5.84
2003	14.3	9.85	14.80	14.44
2004	13.8	1.99	14.04	14.35
2005	12.7	12.31	17.32	10.03
2006	11.2	25.00	23.22	2.69
2007	9.9	19.29	14.97	6.28
2008	8.5	-4.59	11.79	13.07
2009	9.2	-14.56	-0.61	17.82
2010	11.6	1.52	3.62	18.03
2011	13.7	7.32	4.43	13.29
2012	15.9	0.93	-6.17	7.78
2013	17.3	11.51	-0.97	15.96
2014	17.3	9.60	-1.94	4.93
2015	16.2	11.37	-3.08	1.90
2016	13.1	18.19	-3.47	-0.17

Source: CNB, The Bulletin, monthly publication

Table 2: Data for analysis of the impact indicators M1 / GDP Loans / GDP and Gross debt / GDP on unemployment

Y	Unemployment	M1/GDP	Loans/GDP	Gross debt/GDP
1995		8.23	32.70	19.00
1996	10.00	10.53	31.20	28.43
1997	9.90	11.07	39.26	27.30
1998	11.40	9.81	43.31	26.24
1999	13.60	8.47	33.76	29.56
2000	16.10	10.19	34.18	35.82
2001	15.80	12.32	38.64	36.51
2002	14.80	14.80	46.12	36.83
2003	14.30	14.81	48.32	38.10
2004	13.80	13.99	50.97	40.38
2005	12.70	14.36	54.74	40.70
2006	11.20	16.47	61.92	38.30
2007	9.90	17.96	65.03	37.70
2008	8.50	15.88	67.39	39.60
2009	9.20	14.26	70.33	49.00
2010	11.60	14.63	73.57	58.20
2011	13.70	15.48	75.77	65.00
2012	15.90	15.70	71.53	70.60
2013	17.30	17.57	70.65	81.70
2014	17.30	19.16	69.30	85.80
2015	16.20	20.84	65.65	85.40
2016	13.10	23.94	61.60	82.90

Source: CNB, The Bulletin, monthly publication

M1, credit rate and debt-to-unemployment rate data refer to the period from 1996 to 2016, and for the analysis of the impact of the M1 / GDP, Loans / GDP and Gross debt / GDP indicators on unemployment data from 1995 to 2016 is used.

4. RESULTS AND DISCUSSION

The results of the analysis of annual rates' (M1, loan rate and gross debt rate) effect on the movement of unemployment in the Republic of Croatia, shown in Table 3, point to the conclusion that the three observed variables are significant for the movement of unemployment.

Table 3: Analysis of the impact of M1, the loan rate and the debt rate on unemployment

Multiple Linear Regression - Ordinary Least Squares					
Variable	Parameter	S.D.	T-STAT H0: parameter = 0	2-tail p-value	1-tail p-value
(Intercept)	+14.34	0.942	+1.5220e+01	2.449e-11	1.224e-11
M1	+0.1049	0.04563	+2.2980e+00	0.0345	0.01725
Loans	-0.1232	0.04574	-2.6940e+00	0.01536	0.007681
Gross debt	-0.08543	0.04245	-2.0120e+00	0.06031	0.03015
Multiple Linear Regression - Estimated Regression Equation					
Unemployment[t] = + 14.3407 + 0.104869M1[t] -0.123236Loans[t] -0.0854269Gross debt[t] + e[t]					

Table 4: Analysis of the impact indicator M1 / GDP Loans / GDP and Gross debt / GDP on unemployment

Multiple Linear Regression - Ordinary Least Squares					
Variable	Parameter	S.D.	T-STAT H0: parameter = 0	2-tail p-value	1-tail p-value
(Intercept)	+15.15	1.978	+7.6560e+00	6.606e-07	3.303e-07
M1/GDP	-0.259	0.196	-1.3210e+00	0.204	0.102
Loans/GDP	-0.1156	0.04313	-2.6800e+00	0.01581	0.007904
Gross debt/GDP	+0.169	0.03644	+4.6370e+00	0.0002359	0.000118
Multiple Linear Regression - Estimated Regression Equation					
Unemployment[t] = + 15.1469 -0.258967M1[t] -0.115619 Loans/GDP[t] + 0.168969 Gross debt /GDP[t] + e[t]					

On the other hand, the results of the analysis of the effects of monetization and development of the financial sector (observed through indicators M1/GDP, Loans/GDP and Gross debt/GDP) on the movement on unemployment in the Republic of Croatia, shown in Table 4, signal that monetization observed as indicator M1/GDP is not significant for monitoring unemployment, but the development of the financial sector observed as Loans/GDP, as well as the indicator Gross debt/GDP are. Considering both presented models, the conclusion is that the annual growth rate of the money supply is in positive correlation with the rate of unemployment, while the financial sector development and annual growth rate of loans to the private sector negatively correlate with the unemployment rate in the Republic of Croatia. The share of general government gross debt in GDP is positively correlated with unemployment, but the annual growth rate of the general government gross debt and unemployment are negatively correlated.

| *Figure 1: SOM for 1ˢᵗ set of data* | *Figure 2: SOM for 2ⁿᵈ set of data* |
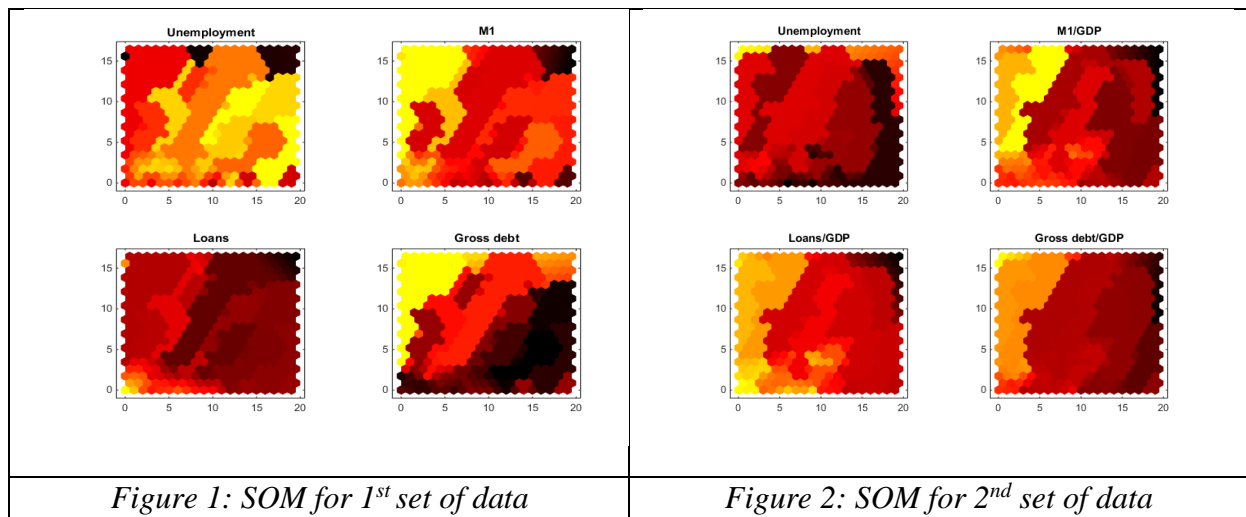
The stated results have been confirmed by the results of the analysis of self-organising neural networks shown in Figure 1 and Figure 2. In addition to the existence of extreme nonlinearity in the interrelatedness of parameters used for observation in both models, it is possible to notice the spillover effects between variables M1 to Gross debt, as well as M1/GDP to Loans/GDP and Loans/GDP to Gross debt/GDP.

5. CONCLUSION

The problems of varied macroeconomic stability of Central and Eastern European countries are connected mostly to continuous volatile period of European countries that has resulted in a range of factors since the beginning of the 2007 crisis, and most frequently with violating the criteria of convergence and fiscal discipline, issues with liquidity of international financial

markets, depreciation of the euro, unemployment increase, slow productivity growth, increased borrowing of public finance sector, as well as the correlation between efficacy and unemployment. The level of monetization, through observing the movement factors that create it and those that affect it, but also through observing the relations between monetary aggregates and GDP, can be used to provide an overview of the condition of financial sector development and the possibility of economic policy development. The greatest issue arising from the analysis of monetization factors and its relation to GDP, as well as the impact of monetization on the components of economic and social development, is that by selecting a „real" monetization indicator, and consequently the financial system development, there is still no consensus, regardless of all research conducted thus far. This paper analyses the effects of M1, loan rate and debt rate, and subsequently the indicators M1/GDP, Loans/GDP and Gross debt/GDP on unemployment from the viewpoint of Croatian conditions. Namely, as there isn't a political or economic consensus in Croatia on the real causes of permanently high unemployment rate, and in the light of research by various authors, results and interpretations of their findings, this paper tends to bring into view the impact of monetary and fiscal policies, as two key driving forces of economic policy, on unemployment, based on empirical data. The research conducted on the effects of M1, loan rate and debt rate, and subsequently the indicators M1/GDP, Loans/GDP and Gross debt/GDP on unemployment used data from the 1995 – 2016 period. Research results indicate that the annual growth rate of the volume of money is in positive correlation with the unemployment rate, while the indicators of financial sector development and the annual loan growth rate in the private sector negatively correlate with the unemployment in the Republic of Croatia. The share of general government gross debt in GDP positively correlates with unemployment, whereas the annual rate of general government gross debt negatively correlates with unemployment. Spillover effects are also noticeable between variables M1 to Gross debt, M1/GDP to Loans /GDP and Loans GDP to Gross debt/GDP. This confirms research thus far that emphasises that the usage of loan funds increases M1 by the process of multiplication within the allowed monetary policy, creation of bank deposits and bank loans. Therefore, the increase in real M1 balance can serve as the basic value in less financially developed economies. The spillover effects of M1/GDP to Loans/GDP also confirm previous research pointing out that price setting on a wider level, through the interest amounts on deposits and loans in a specific development stage, should represent a mechanism through which financial sector development can promote economic development. However, the spillover effects of Loans/GDP to Gross debt/GDP confirm the latest research emphasising the necessity to design financial policies in accordance with the priorities of the industrial and economic policy. In conclusion, the existing level of economic earnings, substantially developed financial sector with appropriate regulations, available possibilities of financing and refinancing public debt as well as available statistical data provide solid grounds to the Croatian policy makers for a different approach to managing and creating measures that will lead to a decrease in the unemployment rate. Nevertheless, a decrease in negative and an increase in positive effects of the observed variables on unemployment demand a relative political, economic and social consensus at state level. As guidelines for future research we accordingly suggest developing a model to monitor the effect of monetary aggregates to GDP, the level of financial development as the ratio of loans to the private sector and GDP, and the level of indebtedness as a share of total public debt to GDP on unemployment, which would take into account the results of this research and the nonlinearity in the movement of these dependencies.

LITERATURE:
1. Abu-Bader, S., Abu-Qarn, A. S. (2005). Financial Development and Economic Growth. The Egyptian Experience, Discuusion paper. No. 05-14. Monaster Center for Economic Research, department of Economics, Ben-Gurion Univ. of Negev P.O.Box 653, Beer sheva Israel 1-36.
2. Arestis, P. (2005). Financial Liberalisation and the relationship between Finance and Growth. University of Cambridge. CEPP working paper 05/05.
3. Avci, S.B., Yucel, E. (2017). Effectiveness of monetary policy: evidence from Turkey. Eurasian Economic Review. Vol.7. Issue. 2. pp 179-213.
4. Beck, T., Demirguc-Kunt, A., Levine, R., Maksimovic, V. (2000). Financial Structure and Economic Development. Firm, Industry, and Country Evidence. World Bank Working Paper, No. 2423.
5. Brlečić Valčić, S. (2016). Relationship between different business value components within the oil and gas industry. Ekonomski vjesnik : časopis Ekonomskog fakulteta u Osijeku. Vol. 29. Issue 1. pp 241-256.
6. Capolupo, R. (2018). Finance, Investment and Growth: Evidence for Italy. Economic Notes. Vol. 47. Issue 1. pp 145-185.
7. Carlin, W. Mayer, C. (2003). Finance, Investment and Growth. Journal of Financial Economics. Vol. 69. Issue 1. pp 191-226.
8. De Gregorio, J. and Guidotti, P.E. (1995). Financial Development and Economic Growth. World Development. Vol. 23 . Issue 3, pp 433-448.
9. IMF:World Economic Outlook, April 2016.
10. Kar, M., Pentecost E.J. (2000). Financial Development and Economic Growth in Turkey: Further Evidence on the Casuality Issue. Economic Research Papaer. 00/27.
11. Kohonen, T. (1987). Self-Organization and Associative Memory, 2nd Ed. Berlin: Springer-Verlag
12. Kutan, A.M., Samargandi, N., Sohag, K. (2017). Does Institutional Quality Matter for Financial Development and Growth? Further Evidence from MENA Countries. Australian Economic Papers. Vol. 56. Issue 3. pp 228-248.
13. Landais, C., Pascal M., Saez, E. (2015). A Theory of Optimal Unemployment Benefit Insurance over the Business Cycle. NBER Working Paper 16526, National Bureau of Economic Research, Cambridge, Massachusetts.
14. 14. Lynch, D. (1996): Measuring Financial Sector Development: A Study Of Selected Asia-Pacific Countries. Developing Economies. Vol. 34. Issue 1, pp 3-33.
15. McLoughlin, C., Kinoshita, N. (2012). Monetization in Low- and Middle-Income Countries. IMF Working Paper. WP/12/160.
16. Papapetrou, E, Tsalaporta, P. (2017). Unemployment, Labour Market Institutions, Fiscal Imbalances And Credit Constraints: New Evidence On An Active Debate. The Manchester School. Vol.85. Issue 4. pp 466-490.
17. Pera, J. (2016). Evaluation Of The Macroeconomic Stability Of Central And Eastern European Countries With A View Toward Their Membership In The European Union. Multidimensional Risk Analysis. Comparative Economic Research-Central And Eastern Europe. Vol. 19. Issue 3, pp 69-92.
18. Rousseau, P.L., D'Onofrio, A. (2013). Monetization, Financial Development, and Growth: Time Series Evidence from 22 Countries in Sub-Saharan Africa. World Development. Vol. 51. pp 132-153.
19. Whang, E. (2015). The Effects of Hartz IV Reform on Precautionary Savings.Netspar Discussion Paper 07/2015-015, Tilburg, Netherlands.

20. Yulek, M.A. (2017). Why governments may opt for financial repression policies: selective credits and endogenous growth. Economic Research - Ekonomska Istrazivanja. Vol. 30. Issue 1. pp 1390-1405.
21. https://www.hnb.hr/
22. http://ec.europa.eu/eurostat

CORPORATE GOVERNANCE AND THE PERFORMANCE OF TUNISIAN COMMERCIAL BANKS: A FUZZY-SET QCA APPROACH

Ibtissem Makbli
High Institute of Management, University of Tunis, Tunisia
ibtissemmakbli15@gmail.com

ABSTRACT

In this paper we investigate the role of commercial banks' governance mechanisms in financial performance and loan quality. The research draws upon corporate governance theory, agency theory, and information asymmetry. Fuzzy-set QCA was used to analyze a sample of 10 commercial listed banks selected for the period 2005-2015. Results confirm that different combinations of governance mechanisms can yield similar financial performance and loan quality. This study contributes to a better understanding of the relationships among banking governance mechanisms and financial performance. The paper also has practical implications because it finds alternative governance solutions for the commercial banking sector.
Keywords: *Agency theory, corporate governance, commercial banks, financial performance, fuzzy-set QCA*

1. INTRODUCTION

A strong corporate governance system reduces agency problems that arise from information asymmetry between managers and shareholders (Walkner, 2004). These issues are talked by the corporate governance view and are covered by agency theory and information asymmetry. A better insight of banking activity is crucial. This means applying specific and generic performance indicators to banking activity. Empirical governance studies still fail to clarify the performance of banks (Adams & Mehran, 2003; Grove, Patelli, Victoravich, & Xu, 2011; Felício, Ivashkovskaya, Rodrigues, & Stepanova, 2014). This research evaluates how well different governance mechanisms realize strong financial performance and ensures high-quality lending by listed Tunisian commercial banks. The ambiguity, both theoretical and empirical, prompted us to clarify this association for the Tunisian case. The objectives of this study are as follows: (1) to investigate the relationships among governance mechanisms and financial performance; (2) to prove if strong financial performance may be related with several alternative governance mechanisms; We answer the following research questions: Are commercial banks' governance mechanisms associated to financial performance? If such a relationship exists, is there a unique solution or do alternative solutions exist? To discover these issues, we focused on listed Tunisian commercial banks. The sample consisted of 10 commercial banks. Analysis was conducted using fuzzy-set QCA. Section 2 describes the theoretical background and propositions. Section 3 explains the method. Section 4 presents the empirical results and analysis. Section 5 discusses these results. Finally, section 6 offers conclusions, and section 7 discusses limitations and future research opportunities.

2. THEORETICAL BACKGROUND AND PROPOSITIONS

Corporate governance refers to "the set of mechanisms that influence the decisions made by managers when there is a separation between ownership and control" (Larcker, Richardson, & Tuna, 2007). Governance mechanisms are indirect control instruments that shareholders utilize to moderate agency problems between shareholders (principals) and managers (agents) by influencing managers' behavior (Deshmukh, 2005; Chen, Chung, Lee, & Liao, 2007). McNulty, Florackis, & Ormrod (2013) state that "Corporate governance is designed to reduce asymmetric information, control managerial opportunism, and redirect management toward optimal behavior".

Size, composition, and functioning of the board of directors are the most important corporate governance mechanisms. We analyzed the governance factors of board size, board independence, CEO duality, bank size and bank age formulated the following propositions:

2.1. Board size
A large board of directors is useful in the sense that it makes expertise and resources more readily accessible to firms (Dalton, Johnson, & Ellstrand, 1999). Nonetheless, other authors argue that large boards impair firm performance (Hermalin & Weisbach, 2003).
We thus formulate the following proposition:

Proposition 1: A large board at a commercial bank leads to strong financial performance Independent directors.

2.2. Independent directors
Literature and corporate governance recommendations often focus on the role of independent directors. Van Essen, Engelen, & Carney (2013) account the importance of directors' independence, claiming that the clear division between these directors and insiders or major shareholders ensures that directors can independently assess the management. Following this analysis, a higher percentage of independent directors would be favorable. However, there are several definitions of independence, and access to consistent data on independence is often limited. We thus formulate the following proposition:

Proposition 2: The presence of independent directors on the board of a commercial bank leads to strong financial performance.

2.3. CEO Duality
The "duality" can be defined as the appointment of the same person over the same period, the two positions of the Director General and the Chairman of the Board. Concerning the banking sector, few studies have addressed the effect of duality on the performance of banks.

Proposition3: The absence of CEO duality leads to strong financial performance.

2.4. Bank size
The bank size is measured through the natural logarithm of total assets. This variable is also used by Godard (2001) who found that the bank size has a positive and significant effect on profitability and loan quality.

Proposition4: High bank size leads to strong financial performance.

2.5. Bank age
Bank Age is measured by the natural logarithm of years since bank establishment. Some of the studies have been made related to the relationship between the age and the profitability referred the existence of a negative relationship between the two variables.

Proposition5: High bank age leads to strong financial performance.

3. RESEARCH MODEL AND PROPOSITIONS
The research model (Figure 1) was used to explore how different combinations of governance factors affect financial performance (Larcker et al., 2007; Grove et al., 2011; Felício et al., 2014).

Figure 1: The research model
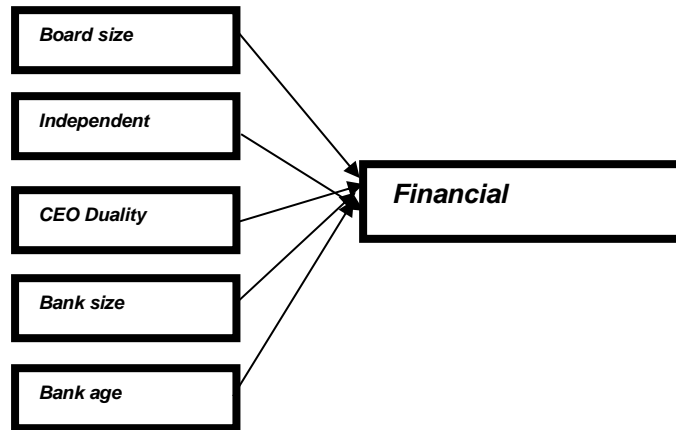
4. ATTRIBUTES AND VARIABLES

The governance factors (attributes) chosen for this research were based on factors discussed by Larcker et al. (2007), Grove et al. (2011), and Felício et al. (2014). The research model had five attributes and two outcomes. The attributes were board size, board independence, CEO duality, Bank size and Bank age. The outcomes were financial performance, measured by return on assets (ROA). The governance data were gathered manually from annual reports, and the outcome variables were collected from the Bankscope database. Board size comprised the number of members on the compensation committee, the number of members on the audit committee, and the number of members on the board of directors (Larcker et al., 2007). Board independence is defined as the percentage of independent members of the board. Duality is an indicator of whether or not a firm's CEO is also the chairman of the board of director (DUALITY is a dummy variable equal to 1 if the CEO is also the chairman of the board and 0 otherwise). Bank size was measured as the logarithmic function of total assets. As previous research has reported that bank size affects performance (e.g., Ramaswamy, 2001; Westphal & Zajac, 1995). Bank Age is measured by the natural logarithm of years since bank establishment.

4.1. Outcomes

As per Grove et al. (2011), we mesured one outcome variable. Return on assets (ROA) was the proxy for financial performance; ROA represents the ratio of operating income to total assets, and it reflects overall firm performance.

4.2. Sample, data collection, and analysis method

The sample consisted of listed Tunisian banks. The list, consisting of 10 banks, was obtained from historical data. Data on financial variables came from the Bankscope database. Corporate governance variables came directly from bank reports.

5. METHODOLOGY

We used fuzzy-set QCA to identify the causal conditions that guide to good financial performance. Set-theoretic analysis identifies causal patterns by examining the relationships between subsets. Rather than estimate the net effects of single variables, QCA employs Boolean logic algebra to study the relationship between an outcome and all binary combinations of multiple predictors. That is, given an outcome set Y and causal conditions (also referred to as antecedent conditions or factors) A and B, QCA examines which combinations of causal conditions A and B are most likely to produce Y. The result is a number of distinct combinations of conditions, called configurations or causal recipes, which suggest different theoretical pathways to create the outcome under analysis (Longest & Vaisey, 2008).

175

QCA proceeds in several steps. Before the analysis can get place, the QCA requires the transformation of outcomes and antecedent conditions into sets. This process is known as calibration, and aims at categorizing meaningful groupings of cases (Ragin, 2008). Each variable is changed to represent the individual's level of membership in a given condition. Set membership values in fsQCA range from full membership (1) to full non-membership (0.0), including the crossover point (0.5) indicating "neither in nor out" of the set. Determination of the breakpoints permits calibration of all original values into membership values. The next step is to build a truth table using the measures specified in the previous stage. This table sorts cases by the combinations of causal conditions they exhibit. All logically-possible combinations of conditions are considered, even those without empirical instances (Ragin, 2008). This data matrix has 2 k rows, where k is the number of causal conditions used in the analysis. The variety of conditions in the analysis defines a property space with k dimensions. Each column represents a condition. The empirical cases are sorted into the rows of this truth table on the basis of their values on these attributes (Fiss, 2011; Schneider & Wagemann, 2012). Boolean algebra is then used to determine commonalities among the configurations that lead to the outcome, generating a logical reduction of statements. Although a number of algorithms exist for carrying out the logical minimization of the truth table, with fsQCA the Quine-McCluskey algorithm is usually chosen (Fiss, 2007 ;Quine, 1952 , 1955).

6. EMPIRICAL RESULTS AND ANALYSIS

Different combinations of attributes led to strong financial performance. Based on the four governance attributes, the maximum number of combinations was 32, although some of these combinations may not have been covered by empirical cases in this sample—these were the logical remainders excluded from the analysis (Feurer et al., 2015; Fiss, 2011; Ragin, 2008).

7. FINDINGS AND DISCUSSION

Table 1 shows a summary of the outcomes and antecedent conditions in fuzzy terms. To facilitate the readability of the tables presented in the next subsections, each variable has been coded. Following Longest and Vaisey (2008), all variables have been transformed into sets using the standardized rank transformation. As shown in the table, the distribution of cases has not changed, but the scale has been "fuzzified" to range between 0 and 1. This way, values represent the level of membership in the set.

Table 1: Distribution of each variable and its corresponding set

Variable Set	Coding	Original range	Original mean	Set mean
ROA	R	-9.92; 12.59	1.174	0.5
Board Size	S	4; 18	10.76	0.510
Board Indep	I	1; 6	2.86	0.478
Duality	D	0; 1	0.4	0.4
Bank Size	T	-6.907; 6.101	3.171	0.497
Bank Age	A	2.890; 4.875	3.800	0.5

Table 2: bestfit

bestfit	Freq.	Percent	Cum.
SIDTA	4	4.00	4.00
SIDTa	2	2.00	6.00
SIDtA	4	4.00	10.00
SIDta	3	3.00	13.00
SIdTA	8	8.00	21.00
SIdTa	1	1.00	22.00
SIdtA	3	3.00	25.00
SIdta	5	5.00	30.00
SiDTA	2	2.00	32.00
SiDTa	2	2.00	34.00
SiDtA	5	5.00	39.00
SiDta	4	4.00	43.00
SidTA	2	2.00	45.00
SidTa	1	1.00	46.00
SidtA	3	3.00	49.00
Sidta	3	3.00	52.00
sIDTA	2	2.00	54.00
sIDTa	7	7.00	61.00
sIDtA	2	2.00	63.00
sIdTA	4	4.00	67.00
sIdTa	6	6.00	73.00
sIdtA	4	4.00	77.00
sIdta	4	4.00	81.00
siDTA	1	1.00	82.00
siDTa	1	1.00	83.00
siDta	1	1.00	84.00
sidTA	1	1.00	85.00
sidTa	6	6.00	91.00
sidtA	5	5.00	96.00
sidta	4	4.00	100.00
Total	100	100.00	

From table 2, we note that 4% of banks are likely to experience all of the independent measures at above-median levels (SIDTA), while the most common configuration (SIdTA), with 8% of the sample best fitting it, indicates large board size, high board independence, absence of duality, high bank size, and high bank age.

Table following on the next page

ROA

Table 3: Coincidence Matrix

	R	S	I	D	T	A
R	1.000					
S	0.610	1.000				
I	0.694	0.675	1.000			
D	0.506	0.557	0.485	1.000		
T	0.822	0.627	0.709	0.547	1.000	
A	0.634	0.678	0.702	0.481	0.675	1.000

Table 4: Sufficiency and Necessity Matrix

	R	S	I	D	T	A
R	1.000	0.610	0.665	0.405	0.818	0.634
S	0.597	1.000	0.633	0.436	0.611	0.664
I	0.694	0.675	1.000	0.405	0.709	0.702
D	0.506	0.557	0.485	1.000	0.547	0.481
T	0.822	0.627	0.683	0.440	1.000	0.675
A	0.634	0.678	0.672	0.385	0.672	1.000

Tables 3 and 4 show the relationship between the outcome (Bank performance) and the antecedent conditions. From Table 3.3 it can be inferred that all causal conditions considered are somehow related to the outcome variable, as the coincidence scores are above 0.6. On the other hand, Table 3.4 reveals that high bank size is the single set that (alone) is most sufficient for predicting the outcome (consistency = 0.822). This initial result seems to support that the influence of board of director on bank performance depend on bank size. Seeing that the variable sets are indeed related, we further continue with the analysis by examining the consistency of different configurations when causal conditions are combined. To achieve this, we first look for configurations that have y consistencies (positive outcome) significantly greater than their n consistencies (negation of the outcome). Based on the results displayed in Table 3.5, nine configurations (sidTa sidTA siDTa siDTA sIdTA sIDTa sIDTA SiDTa SIDTa) can be considered, where factors in lowercase letters indicate the absence of that condition, and uppercase letters its presence. Following this convention, configuration "sidTa" for example can be interpreted as low board size, low board independence, absence of duality, high bank size and low bank age. Additionally, we also determine which configurations have y consistency levels significantly higher than the threshold value of 0.700. Figures on Table 5 indicate that for the given input, twenty one configurations are consistent at the 0.05 level of significance. The next step consists of selecting only those configurations that passed both tests. Nine common sets are found: sidTa sidTA siDTa siDTA sIdTA sIDTa sIDTA SiDTa SIDTa. However, they may still overlap. Using the Quine-McCluskey algorithm we can perform the reduction. Indeed, when performed, this algorithm returns only three configurations: siT sTA DTa, with a total coverage of 0.645 and consistency of 0.929, meaning that our nine configurations are collapsed into three. This result indicates that Tunisian bank performance is positively influenced by the high bank size as well as by the low board size and independence or, by the high bank size and high bank age as well as by the low board size or, by the high bank size and low bank age as well as by the presence of duality.

8. CONCLUSION

Our findings highlight the importance of corporate governance attributes in achieving strong financial performance. For this analysis, we used the innovative fsQCA method, which identifies different configurations of attributes that lead to the desired outcome. Different solutions yielded similar results, a finding which implies that effects vary according to context or complementarities between attributes. The effect of certain attributes was enhanced or suppressed by the presence of another attribute. This finding highlights the importance of tailoring the governance model to each bank. The results highlight the presence of small board size, law board independence and high bank size in banks with the best financial performance. An alternative solution, to obtain a greatest ROA, oldest and largest Tunisian bank did not require much administrator in their boards. Nevertheless, largest and youngest banks, can obtain more performance through the presence of CEO duality. This latter result confirms findings established by Pi and Timme (1993) which provided evidence that banks with dual leadership had lower costs and higher accounting returns (returns on assets) than those with unitary leadership structures.

9. LIMITATIONS AND FUTURE RESEARCH

These results are encouraging in so far as they support the use of fsQCA to corporate governance research and present new insight in response to unanswered research questions. Further research opportunities however remain. These include enlarging the sample and applying fsQCA to other sectors and governance variables. This method may have similar potential in corporate governance research on SMEs. In this study, we used governance factors adopted by other researchers, yet the same approach may be useful to specific individual variables. We recommend, nevertheless, that researchers analyze non-linear relationships—such as those discussed by Grove et al. (2011)—and seek the most suitable approach to address this issue using fsQCA. This study is fixed in agency theory and information asymmetry theory. FsQCA may also be practical for analysis within other theoretical frameworks such as stewardship theory or resource dependency theory (Valenti et al., 2010). Such analysis may provide a better understanding of the effect of governance mechanisms on performance and risk. Furthermore, it would be interesting to study other commercial banking governance mechanisms in different contexts.

LITERATURE:

1. Adams, R, and Mehran, H. (2003). Is corporate governance different for bank holding companies? *Economic Policy Review*, Federal Reserve Bank of New York, April, 123-142.
2. Beck, Demirgüç-Kunt, and Peria. (2011). Evidence Across Countries and Bank Ownership *Type, Bank Financing for SME*. April 2011, Volume 39, Issue 1, pp 35–54.
3. Belkhir, M. (2009). Board of directors size and performance in the banking industry, *International Journal of Managerial Finance*, 5, 201-221.
4. Dalton, D.R, Daily, C.M, Johnson, J.L. and Ellstrand, A.E. (1999). Number of Directors and Financial Performance A Meta-Analysis. *The Academy of Management Journal*, 42, 674-686.
5. Dermine, J. (2013). Bank corporate governance, beyond the global banking. *Financial Markets, Institutions & Instruments,* 22, 259–281.
6. Deshmukh, S. (2005). The effect of asymmetric information on dividend policy. *Quarterly Journal of Business & Economics*, 44, 107–127.
7. Diamond, D.W, and Verrecchia, R.E. (1991). Disclosure, liquidity, and the cost of capital. *Journal of Finance*, 46 (4), 1325-1359.

8. Felício, J.A, Ivashkovskaya, I, Rodrigues, R, and Stepanova, A. (2014). Corporate governance and performance in the largest European listed banks during the financial crisis. *INNOVAR, 24*(53), 83-98.

9. Feurer, M, Springenberg, T, and Hutter, F. (2015). Initializing Bayesian hyperparameter optimization via meta-learning. *In AAAI Conference on Artificial Intelligence*, 1128–1135.

10. Fiss, P. C. (2011). Building better causal theories: A fuzzy set approach to typologies in organization research. *Academy of Management Journal*, 54(2), 393–420.

11. Friedman. Ownership and object history. (2011): *New Directions for Child and Adolescent Development*. Volume 2011, Issue 132, Summer 2011, Pages 79–89.

12. Grove, H., Patelli, L., Victoravich, L. M., and Xu, P. (2011): Corporate governance and performance in the wake of the financial crisis: evidence from U.S. commercial banks. *Corporate Governance: An International Review*, 19(5), 418-436.

13. Harris, I.C., and Shimizu, K. (2004). Too busy to serve? An examination of the influence of over boarded directors. *Journal of Management Studies*, 41, 775-798.

14. Harris, M., and Raviv, A. (2008). A theory of board control and size. *Review of Financial Studies,* 21 (4), 1797-1832.

15. Hermalin, B.E., and Weisbach, M.S. (2003). Boards of directors as an endogenously determined institution: *A survey of the economic literature. Economic Policy Review*, 9, 7–26.

16. Hermalin, B.E., and Weisbach, M.S. (2003). Boards of directors as an endogenously determined institution: A survey of the economic literature. *Economic Policy Review, 9,* 7–26.

17. J. Augusto Felício, António Samagaio, and Ricardo Rodrigues. (2016). corporate governance and the performance of commercial banks: a fuzzy-set qca approach. *Journal of Small Business Strategy*.Vol. 26, No.1.

18. Jensen, J.C. (1993). The modern industrial revolution, exit, and the failure of internal control systems. *Journal of Finance*, 48, 1-80.

19. Larcker, D.F., Richardson, S.A., & Tuna, I. (2007). Corporate governance, accounting outcomes, and organizational performance. *The Accounting Review*, 82, 963-1008.

20. Longest.K.C and Vaisey.S. (2008). fuzzy. A program for performing qualitative comparative analyses (QCA) in Stata. *Stata Journal*, 2008, vol. 8, issue 1, 79-104.

21. McNulty, T., Florackis, C. and Ormrod, P. (2013). Board of directors and financial risk during the credit crisis. *Corporate Governance: An International Review, 21*(1), 58-78.

22. Miller, J. S., Wiseman, R. M., and Gomez-Mejia, L. R. (2002). The fit between CEO compensation design and firm risk. *Academy of Management Journal*, 45(4), 745-756.

23. Ragin, C.C., and Fiss, P.C. (2008). Net effects analysis versus configurational analysis: An empirical demonstration. In C.C. Ragin (Ed.), *Redesigning social inquiry: Fuzzy sets and beyond*: 190–212. Chicago: University of Chicago Press.

24. Renders, A., and Gaeremynck, A. (2012). Corporate governance, principal–principal agency conflicts, and firm value in European listed companies. *Corporate Governance: An International Review*, 20(2), 125–143.

25. Schneider, C Wagemann (2012): Set-theoretic methods for the social sciences: A guide to qualitative comparative analysis.

26. Shleifer, Andrei and Robert W Vishny (1997). A survey of Corporate Governance. *Journal of Finance,* volume 52(2), pp. 737-783.

27. Smith, M. (1996). Shareholder activism by institutional investors: Evidence from CalPERS. *The Journal of Finance*, 51, 227-252.

28. Valenti, M.A., Mayfield, C.O., and Luce, R.A. (2010). What attracts directors to boards of small- and mid-sized companies? *Journal of Small Business Strategy*, 21(1), 65-82

29. Van Essen, M., Engelen, P.J., and Carney, M. (2013). Does "good" corporate governance help in a crisis? The impact of country- and firm-level governance mechanisms in the European financial crisis. *Corporate Governance: An International Review*, 21(3), 201-224.
30. Walkner, C. (2004). Issues in corporate governance. European Commission: Brussels.
31. Wei, Y.S., Samiee, S., and Lee, R.P., (2014). The influence of organic organizational cultures, market responsiveness, and product strategy on firm performance in an emerging market. *Journal of the Academy of Marketing Science*, 42(1), pp.49-70.
32. Westphal. James D and Edward J. Zajac (1995). Who Shall Govern? CEO/Board Power, Demographic Similarity, and New Director Selection. *Administrative Science Quarterly*, Vol. 40, No. 1 (Mar., 1995), pp. 60-83.
33. Zhou, J., and Chen, K.Y. (2004). Audit committee, board characteristics and earnings management by commercial banks. *Working Paper*. SUNY at Binghamton.
34. Zingales (2008): Trusting the Stock Market: *The Journal of Finance*. Volume 63, Issue 6, December 2008, Pages 2557–2600.

MARKET ACTIVITIES IN THE SPHERE OF DISTRIBUTION – A COMPARISION OF DAIRY COOPERATIVES FROM SWIETOKRZYSKIE AND MALOPOLSKIE PROVINCES

Izabela Konieczna
The Jan Kochanowski University in Kielce, Poland
izabela.konieczna@ujk.edu.pl

ABSTRACT

Every enterprise that operate in the market economy face to the turbulent environment. Even though enterprises operate on the same market they differ in making decisions that affect the customer's value. Therefore, the aim of the article is an analysis and a comparison of market activities in the sphere of distribution, which according to managers of dairy cooperatives from Świętokrzyskie and Małopolskie Provinces, have an influence on customers' value. Because of the tendency of the representatives of cooperatives to participate in the research, the research had been conducted on a sample of 41% of the dairy cooperatives from Świętokrzyskie and Małopolskie provinces from Poland using the interview questionnaire. Cooperatives' representatives were asked to indicate activities that, in their opinion, have an influence on customers' value on such markets as: province in which the cooperative is established, other Polish provinces, European Union markets, and other major markets. The results of the research show that cooperatives from both provinces differ in indicating activities affecting customer value realized on particular markets in the area of distribution. They differ in indicating such activities as the sales of products on the Internet, the ownership of retail chain, the provision of products in a shorter time than competitors, the provision of products on time, the assurance of convenient time of purchase, the assurance of convenient place of purchase, the differentiation of distribution methods, individualization of deliveries in terms of time, size, range and method of delivery, the assurance of the reliability of supplies in terms of time, quality and quantity of delivered products, the assurance of the fast communication with the buyer (on-line), the assurance of the logistics and transport services.
Keywords: Implemented activities, Distribution, Cooperatives

1. INTRODUCTION

The activities connected with distribution depend on the business environment especially in times when the level of competition is considerably higher. The aim of the enterprise is to provide as much value to the customer as possible while creating optimized business operations, in this case regarding distribution activities. The distribution process must meet the appropriate conditions of achieving products in accordance with the requirements of the businesses operating on the market, taking into account the nature of products, consumption structure, the presence of competing units, the structure of media outlets, the specific situation of the development of production and marketing at certain times (Budacia, 2003, p. 34). Products and services have little or no value unless they are in the possession of customers when (time) and where (place) they wish to consume them (Ballou, 1999, p. 118). If the product cannot reach its chosen destination at the appropriate time, then it can erode competitive advantage and customer retention (Yeboah et al., 2013, p. 28). Therefore, distribution professionals should strive every day to add value for their customers. There was already conducted research on the identification of the actions of value creation for the customer in the area of distribution logistics (Konieczna, 2014a), other research on the identification of the validity of the features of the offer for clients in the area of distribution (Konieczna, 2014), and the research on perception of actions in the sphere of distribution, realized by cooperatives (Konieczna, Garasym, 2014).

Market activities in the sphere of distribution that according to managers of dairy cooperatives from Świętokrzyskie Province, have an influence on customers' value had already been analyzed (Konieczna, 2016). However, additional informational value have the comparison of cooperatives' activities from two neighboring provinces, because even though enterprises operate on the same market they differ in making decisions that affect the customer's value. Hence, the aim of the article is an analysis and a comparison of market activities in the sphere of distribution, which according to managers of dairy cooperatives from Świętokrzyskie and Małopolskie provinces, have an influence on customers' value. Because of the tendency of the representatives of cooperatives to participate in the research, the research had been conducted on a sample of 41% of the dairy cooperatives from Świętokrzyskie and Małopolskie provinces from Poland using the interview questionnaire. Cooperatives' representatives were asked to indicate activities that, in their opinion, have an influence on customers' value on such markets as: province in which the cooperative is established, other Polish provinces, European Union markets, and other major markets.

2. THE ESSENCE OF THE PHYSICAL DISTRIBUTION IN CREATING THE VALUE FOR THE CONSUMER

Distribution systems are usually divided into:
- acquisition distribution system;
- logistic, i.e. physical distribution system (Segetlija, Mesarić, Dujak, 2011, p. 787).

While acquisition distribution system concerns distribution channels, the physical distribution is concerned with the ways organizations get the physical product to a point where it is most convenient for the consumer to buy it (Blythe, 2005, p.190). Physical distribution and the channel of distribution are not independent decision areas. They must be considered together in order to achieve the organization's goal of satisfied customers (Burnett, 2008, p. 264). Physical distribution provides time and place utility and makes possession utility possible (Perreault, McCarthy, 2002, p. 330). The purpose of any physical distribution method is to get the product from its point of production to the consumer efficiently and effectively. The product must arrive in good condition, and fit the consumer's need for convenience, or cheapness, or choice, or whatever else the particular target market thinks is important (Blythe, 2005, p.190). Physical distribution functions are work activities centered on the process of order fulfillment, including how orders are to be placed and submitted to the firm (e.g., lead times, minimum order sizes), warehousing, inventory control, delivery and payment (Frazier, 2009, p. 24). These are the following basic elements, or activities, of the physical distribution systems: transportation, storage, control of stores, handling of goods, processing of orders, and packaging (Koriath, Thetrich, 1998; referenced by Hajdarpašić, 2013, p. 43). Customers do not care how a product was moved or stored or what some channel member had to do to provide it. Rather, customers think in terms of the physical distribution customer service level – how rapidly and dependably a firm can deliver what the customers want. Marketing managers need to understand the customer's point of view (Perreault, McCarthy, 2002, p. 331). The main reason for the growth in importance and interest in physical distribution and logistics is the fact that the logistics system offers substantial potential for achieving a competitive edge and winning and keeping customers. Particularly in industrial markets, where products may be relatively undifferentiated and margins are slender, companies find they can gain a competitive edge by using their logistical system to improve customer service levels and this might be critical in terms of customer choice. This may allow a company to increase volumes of sales and/or increase prices (Lancaster, Massingham, 2011, p. 215). The physical distribution concept says that all transporting, storing, and product-handling activities of a business and a whole channel system should be coordinated as one system that seeks to minimize the cost of

distribution for a given customer service level. Both lower costs and better service help to increase customer value (Perreault, McCarthy, 2002, p. 333). Physical distribution represents both a cost component and a marketing tool for the purpose of stimulating customer demand. Physical distribution improvements that lower prices or provide better service are attractive to potential customers. Similarly, if finished products are not supplied at the right time or in the right places, firms run the risk of losing customers (Burnett, 2008, p. 267). A marketing manager may have to make many decisions to ensure that the physical distribution system provides utility and meets customers' needs with an acceptable service level and cost (Perreault, McCarthy, 2002, p. 330). Physical distribution is a capability because it impacts the customer directly through delivery speed and quality. Customers experience firsthand the performance of the distribution system (Garavelli, 2003; referenced by Tosun, Uysal, 2016, p. 54). The physical distribution should be designed so that it meets the requirements and needs of customers. In addition, distribution costs should be, as well as other elements of the distribution system, evaluated from the standpoint of customer demands (Hajdarpašić, 2013, p. 43). Physical distribution includes activities such as customer service/order entry, administration, transportation, warehousing (storage and materials handling), inventory carrying, and the systems and equipment necessary for these activities (Ferrel, Hartline, 2011, p. 265). Physical distribution flexibility is the ability of a firm to adjust the inventory, packaging, warehousing, and transportation of physical products to meet customer needs, quickly and effectively. Physical distribution flexibility involves material and information flow, and it demands agility in activities such as packaging, warehousing, and outgoing transportation (Tosun, Uysal, 2016, p. 54). Physical distribution, as part of the logistical process, is the main tool through which logistics can achieve its goal. According to this approach, the activities typical of distribution become complex tools correlated with the facilities provided by the new technologies, such as the Internet, which imply increasing requirements as to space and time spans, real-time and very swift information, tighter delivery deadlines, larger area of operation, and so on (Burda, 2012, p. 82). Effective management of physical distribution has a substantial impact on a company and its customers' costs, efficiency and effectiveness. If these are well planned and implemented, they are competitive tools that can build sustainable competitive advantage (Lancaster, Massingham, 2011, pp. 213-214). Physical distribution must fulfill a whole range of functions that are important both for producers and other related enterprises as well as for the consumers. This complex of functions helps ensure the appropriate flow of goods from producers to stores (Burda, 2012, p. 84) – see table 1.

Table following on the next page

Table 1: Traditional and modern functions of physical distribution (Patriche, 2006; referenced by Burda, 2012, pp. 84-86)

Traditional functions	Modern functions
Adjustment of offer and demand according to space that takes into account the size of its area of operation amidst globalization and the modernizing exchanges of goods and activities.	*Product conception and marketing* refers to the involvement of distributors in developing and planning their own products that are obtained with the help of specialized producers and distributed via their own network of stores.
Time correlation between demand and offer that implies harnessing the time proximities by providing the maximum speed to the circulation of goods, continuously renewing current product flows and saving time in their economic circuit, changing storage, delivery and financing policies for commercial operations.	*Information management* – it helps to acquire and store detailed data on sales and consumer purchase behavior throughout the selling process. These data underpin the sales-related information about: a) *demand* that allows the producer to adapt the sales strategy to the development of demand and to provide high-level delivery. b) *goods* that is provided to the consumer and refers mainly to the existence and quality of the producer's goods.
Adjustment of the quantity and customization of goods that means to deliver the goods in the quantity and in the form requested by the consumer.	
Assorting the goods that means to gather in the same store goods that meet various segments or parts of consumer needs.	*Developing new sales concepts* that refers to the creation of a specific product in the form of a global concept with numerous specific features about range, presentation and sales-related services as fundamental elements of the sales strategy.
Exhibiting goods in the store that purpose is to facilitate information, increase attractiveness and help the purchasing decision.	

3. ACTIVITIES AFFECTING CUSTOMER VALUE REALIZED BY DAIRY COOPERATIVES FROM THE ŚWIĘTOKRZYSKIE AND MAŁOPOLSKIE PROVINCES – RESEARCH RESULTS

Cooperatives' executives were asked to indicate activities implemented by cooperatives that have influence on value creation for customers from different markets. Respondents indicated whether on province within which the cooperative is established, i.e. Świętokrzyskie or Małopolskie Province, other Polish provinces, EU markets and other major markets they perform activities in the area of distribution. Interview results are shown in Table 1 and Chart 1.

185

Table 1: Activities affecting customer value realized by dairy cooperatives from the Świętokrzyskie and Małopolskie Provinces on particular markets in the area of distribution (in %) (compiled by author and (Konieczna, 2016, p. 523))

Activity	Province in which the cooperative is established*		Other Polish provinces*		UE markets*		Other major markets*	
	$Ś^a$	M^b	$Ś^a$	M^b	$Ś^a$	M^b	$Ś^a$	M^b
the sales of products on the Internet	0	25	33	25	0	0	0	0
the ownership of retail chain	67	0	67	0	0	0	0	0
the ownership of warehouses, and distribution centers	0	0	0	0	0	0	0	0
the provision of easy access to the product on the market	0	0	0	0	0	0	0	0
the provision of products in a shorter time than competitors	0	50	0	50	0	0	0	0
the provision of products on time	33	25	33	0	0	0	0	0
the assurance of convenient time of purchase	0	0	33	25	0	0	0	0
the assurance of convenient place of purchase	33	25	0	0	0	0	0	0
the differentiation of distribution methods	33	0	33	0	0	0	0	0
individualization of deliveries in terms of time, size, range and method of delivery	33	50	0	25	33	0	0	0
the assurance of the reliability of supplies in terms of time, quality and quantity of delivered products	0	25	33	50	0	0	0	0
the assurance of the fast communication with the buyer (on-line)	33	50	0	25	0	0	0	0
the assurance of the logistics and transport services	0	25	0	25	0	0	0	0

* multiple answers,
a – Świętokrzyskie Province;
b – Małopolskie Province.

When analyzing Table 1 and Chart 1, it is clear that:
- Activities related to the sales of products on the Internet implement 25% of cooperatives from Małopolskie Province on origin province market, and on other Polish provinces' markets, while 33% of cooperatives from Świętokrzyskie Province implement these activities on other Polish provinces market. On the EU markets, and on other major markets, these activities are not implemented by cooperatives either from Świętokrzyskie nor Małopolskie provinces.

- Activities related to the ownership of retail chain implement only 67% of cooperatives from Świętokrzyskie Province on the origin market, and on other Polish provinces' market. Cooperatives from Małopolskie Province do not implement such activities on any market.
- Activities related to the ownership of warehouses, and distribution centers are not implemented on any of indicated markets by cooperatives from both Świętokrzyskie and Małopolskie provinces.
- Activities related to the provision of easy access to the product on the market are not implemented on any of indicated markets by cooperatives from both Świętokrzyskie and Małopolskie provinces.
- Activities related to the provision of products in a shorter time than competitors are implemented only by 50% of cooperatives from Małopolskie Province on the origin market, and on other Polish provinces' market.
- Activities related to the provision of products on time implement 33% of cooperatives from Świętokrzyskie Province on the origin market, and on other Polish provinces' market, while 25% of cooperatives from Małopolskie Province implement such activities only on the origin market. On the EU markets, and on other major markets, these activities are not implemented by cooperatives from both provinces.
- Activities related to the assurance of convenient time of purchase implement 33% of cooperatives from Świętokrzyskie Province and 25% of cooperatives from Małopolskie Province on other Polish provinces' market. On the origin market, on the EU markets, and on other major markets, these activities are not implemented by cooperatives from both analyzed provinces.
- Activities related to the assurance of convenient place of purchase implement 33% of cooperatives from Świętokrzyskie Province and 25% of cooperatives from Małopolskie Province on the origin market. On other Polish provinces' market, on the EU markets, and on other major markets, these activities are not implemented by cooperatives from both provinces.
- Activities related to the differentiation of distribution methods implement only 33% of cooperatives from Świętokrzyskie Province on the origin market, and in other Polish provinces' markets. Cooperatives from Małopolskie Province do not implement such activities on any market.
- Activities related to the individualization of deliveries in terms of time, size, range and method of delivery implement 33% of cooperatives from Świętokrzyskie Province on the origin market, and on the EU market, while 50% of cooperatives from Małopolskie Province implement these activities on the origin market, and 25% on other provinces' market.
- Activities related to the assurance of the reliability of supplies in terms of time, quality and quantity of delivered products implement 33% of cooperatives from Świętokrzyskie Province and 50% of cooperatives from Małopolskie Province on other Polish provinces' market, whereas on the origin market these activities implement 25% of cooperatives from Małopolskie Province.
- Activities related to the assurance of the fast communication with the buyer (on-line) implement 33% of cooperatives from Świętokrzyskie Province and 50% of cooperatives from Małopolskie Province on the origin market. On other Polish provinces' market such activities implement 25% of cooperatives form Małopolskie Province.
- Activities related to the assurance of the logistics and transport services are implemented by 25% of cooperatives from Małopolskie Province on the origin market and on Polish provinces' market.
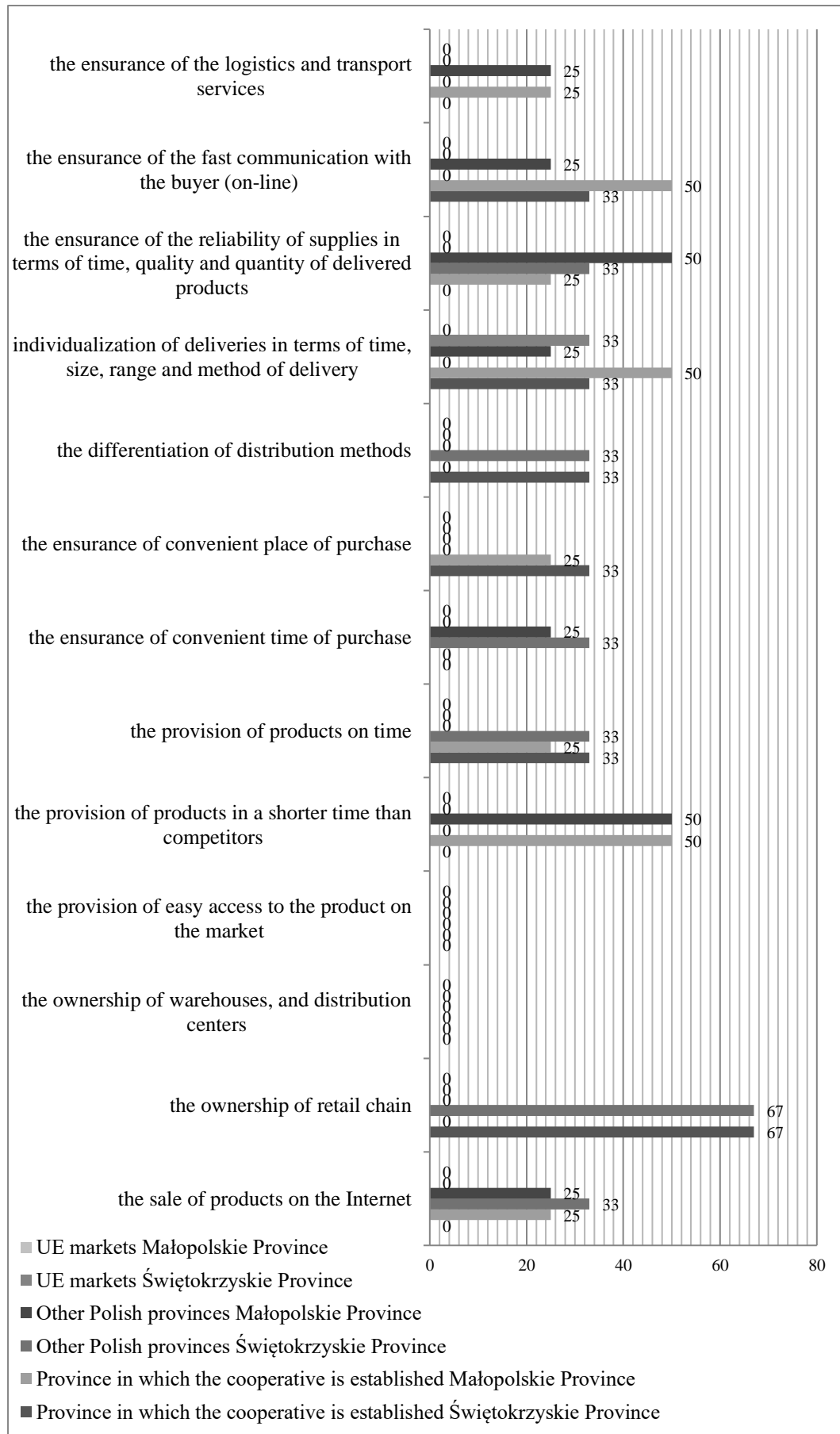
Chart 1: Chart for the data of Table 1 (in %) (compiled by author)

When analyzing Table 1, it is also clear that:

- On the origin market from 25% up to 50% of cooperatives from both Świętokrzyskie and Małopolskie provinces implement the following actions: the provision of products on time, the assurance of convenient place of purchase, individualization of deliveries in terms of time, size, range and method of delivery, and the assurance of the fast communication with the buyer (on-line). Additionally, 33% of cooperatives from Świętokrzyskie Province have their own retail chain, and 67% of them differ distribution methods. On the other hand, 50% of cooperatives from Małopolskie Province provide products in a shorter time than competitors, and 25% of them implement such actions as the sales of products on the Internet, the assurance of the reliability of supplies in terms of time, quality and quantity of delivered products, and the assurance of the logistics and transport services.
- On other Polish provinces market from 25% up to 50% of cooperatives from both Świętokrzyskie and Małopolskie provinces implement the following actions: the sales of products on the Internet, the assurance of convenient time of purchase, the assurance of the reliability of supplies in terms of time, quality and quantity of delivered products. Cooperatives from Małopolskie Province additionally provide products in a shorter time than competitors (50%), individualize deliveries in terms of time, size, range and method of delivery, assure the fast communication with the buyer (on-line), and assure the logistics and transport services (25%), while cooperatives from Świętokrzyskie Province have their own retail chains (67%), provide products on time, and differentiate distribution methods (33%).
- On the EU market only 33% of cooperatives from Świętokrzyskie Province individualize deliveries in terms of time, size, range and method of delivery.
- On other major markets any cooperative implement identified activities.

4. CONCLUSION

Nowadays consumers are searching not only for the product itself but also the value they can receive with it. As show the analysis of the research results, cooperatives implement actions that affect the consumer, but in rather small extend. Taking into account the research results it can be seen that cooperatives concentrate on domestic markets, i.e. origin market, and other Polish provinces market. Apart from one activity that provide 33% of cooperatives from Świętokrzyskie Province, cooperatives do not take any actions on the EU markets, and on other markets. Comparing cooperatives from two analyzed provinces we can see that more activities that affect customer value realize cooperatives from Małopolskie Province, i.e. eight on the origin market, and seven on others Polish provinces markets, whereas cooperatives from Świętokrzyskie Province provide six activities on both the origin and the other Polish provinces markets. Research results show that cooperatives from both provinces are concentrated and targeted only on Polish market, however, cooperatives face to growing competition, and to survive and develop they will need to extend their activities in the area of distribution to other markets. And on the current markets they probably will need to extend the range of the activities to keep existing customers and to attract new ones.

LITERATURE:
1. Ballou, R.H. (1999). Business Logistics – Importance and Some Research Opportunities, Gestão & Produção (1999, 2), pp. 117-129.
2. Blythe, J. (2005). *Essentials of Marketing* (3rd edition). Harlow: Pearson Education Limited.
3. Budacia, E.A. (2003). Considerations Regarding the Distribution of Industrial Goods. *Romanian Economic and Business Review,* (2003, 1), pp. 34-44.
4. Burda, A. (2012). Redefining the Role of Distribution and its Relationship with Production, *Economy, Commerce and Tourism Series,* (2012, IX), pp. 80-92.
5. Burnett, J. (2008). *Core Concepts of Marketing.* Zurich: Global Text Project.
6. Ferrell, O.C., Hartline, M.D. (2011). *Marketing Strategy.* Mason: South-Western, Cengage Learning.
7. Frazier, G.L. (2009). Physical Distribution and Channel Management: A Knowledge and Capabilities Perspective, *Journal of Supply Chain Management,* (2009, 2), pp. 23-36.
8. Hajdarpašić, S. (2013). Management of the Physical Distribution of Foods on the Market, *Annals of the Oradea University,* (2013, 2), pp. 43-47.
9. Konieczna, I. (2014). Ważność cech oferty dla klienta w obszarze dystrybucji z punktu widzenia spółdzielni mleczarskich z województwa świętokrzyskiego, *Logistyka,* (2014, 6), pp. 14354-14364.
10. Konieczna, I. (2014a). Zakres działań spółdzielni mleczarskich z województwa świętokrzyskiego związanych z tworzeniem wartości dla klienta w obszarze logistyki, *Logistyka,* (2014, 6), pp. 14365-14371.
11. Konieczna, I. (2016). Implemented Activities in the Sphere of Distribution – an Example of Dairy Cooperatives from Świętokrzyskie Province. In Z. Primorac, C. Bussoli, N. Recker (eds.). *Economic and Social Development (Book of Proceedings), 16th International Scientific Conference on Economic and Social Development – Legal Challenges of Modern World* (pp. 518-528). Split: Varazdin Development and Entrepreneurship Agency, University of Split, University North.
12. Konieczna, I., Garasym, P. (2014). Perception of the Activities of Cooperatives in the Area of Distribution. The evidence from conducted research in Poland and Ukraine. In M. Mokrys, S. Badura, A. Lieskovsky (eds.). *Proceedings in Scientific Conference (SCIECONF 2014)* (pp. 34-37). Žilina: University of Žilina.
13. Lancaster, G., Massingham, L. (2011). *Essentials of Marketing Management.* Oxon: Routledge.
14. Perreault, Jr., W.D, McCarthy, E.J. (2002). *Basic Marketing. A Global-Managerial Approach.* New York: McGraw-Hill.
15. Segetlija, Z., Mesarić, J., Dujak, D. (2011). Importance of distribution channels - Marketing channels - for national economy¸ *22nd CROMAR Congress*, pp. 785-809.
16. Tosun, Ö., Uysal, F. (2016). Physical Distribution Flexibility in Logistics Systems and Its Impact on Productivity, *Journal of Advanced Management Science,* (2016, 1), pp. 53-56.
17. Yeboah, A., Owusu, A., Boakye, S., Owusu-Mensah, S. (2013). Effective Distribution Management, a Pre-requisite for Retail Operations: A Case of Poku Trading, *European Journal of Business and Innovation Research,* (2013, 3), pp. 28-44.

INTERNET - SELECTED ASPECTS OF THREATS FOR CONTEMPORARY CHILD ON THE EXAMPLE OF POLAND

Agnieszka Budziewicz-Guzlecka
University of Szczecin, Poland
agnieszka.budziewicz@wzieu.pl

Anna Drab-Kurowska
University of Szczecin, Poland
anna.drab@wzieu.pl

ABSTRACT

The end of the 20th century and the beginning of the 21st century is considered the beginning of the information society era, the main quantifier of which is modern information and communication technologies, which have a key impact on socio-economic changes (Martin 2017, p. 2; Nath 2017, p.). Transformations in the sphere of information transfer have created powerful opportunities for humanity. The increase in the possibility of information flow has caused completely new conditions in the context of the human process of communication and cooperation. At the heart of civilization development, there is a progress in information technology. The result of the information revolution is informatization and inter-connectivity of modern society, thanks to which the world today is highly technicized but also complex and strongly diversified. The aim of the article is to attempt to identify the dangers associated with the use of the Internet by children. The article presents the following research hypothesis - Increasing the awareness of parents and children will increase the level of security on the Internet. In reference to the assumed goal and adopted hypothesis, the following research question was posed in the article - what specific actions should be taken in the process of communication between children, parents and educational institutions? In an attempt to answer the question, the article first addressed the impact of modern information technologies on the human being. Next, the focus was on presenting the results of the study, which pointed to problems related to the safety of children on the Internet. The key element of the article is presenting proposals for actions to reduce the risks resulting from using the Internet.
Keywords: information society, Internet, information technologies

1. INTRODUCTION

The end of the twentieth century and the beginning of the 21st century is considered the beginning of the information society era, the main quantifier of which is modern information and communication technologies, which have a key impact on socio-economic changes (Martin 2017, p. 2; Nath 2017, p.). Transformations in the sphere of information transfer have created powerful opportunities for humanity. The increase in the possibility of information flow has caused completely new conditions in the context of the human process of communication and cooperation (Matulewski 2010, p.520). At the heart of civilization development, there is a progress in information technology. The quantity and quality of more and more holistic information systems are becoming an efficient measure of the quality of both economic and social development. The result of the information revolution is the informatization and networking of modern society, which makes the world today highly technicized, but also complex and strongly diversified. It should be pointed out that modern technologies, especially in the IT area, have an increasing impact on the functioning of modern enterprises, setting directions for changes in the management systems of many companies, but above all in social life (Luftman et all, 2017).

The use of advanced IT solutions is particularly evident in the knowledge management processes that lead to increased innovation and competitiveness of enterprises (Norek 2013, p. 85). In the area of enterprises, it should be pointed out that the structures and hierarchies of companies are undergoing transformations, many functions traditionally attributed to the enterprise are disappearing, projects and ventures are more and more frequent and there are fewer and fewer repetitive activities (Gerow et al, 2014, p. 1160). It should be emphasized that values are created by intellectual capital, not by material resources that are characterized by impermanence and temporariness. In addition, the roles and functions of market participants are changing. The processes of digitization and virtualization change many areas of the company's activity, thanks to which sources of competitive advantages are sought in such areas as access to information, knowledge, relations with clients and business partners (Giménez-Figueroa et al, 2018). These new technologies, often referred to as digital technologies, diametrically change not only the way and paradigms of managing a modern enterprise but also affect the expectations of employers and the requirements in terms of knowledge, skills and competencies of employees. Groups of societies raised in different conditions and educated in a different reality are not able to meet the competency requirements of modern organizations (Hejduk 2016, p. 64). As previously indicated, the Internet has revolutionized many areas of human life. First of all, it enables comprehensive communication and facilitates contacts by eliminating spatial restrictions and providing real-time communication. In addition, it has become indispensable as a work and entertainment tool and facilitates learning and developing interests. The Internet is also a helpful tool that facilitates and accelerates communication (Matulewski 2012, p. 445). Therefore, it cannot be denied that the world is changing and it is changing very fast. Consequently, not only technology is undergoing transformation, but also the processes, relationships, bonds which this technology determines and the awareness of the effects of its actions, both positive and negative (Kuźbik 2014, p.194). However, it is necessary to point out a number of threats (Çikrıkci 2016, p. 561), but it is difficult to estimate their scale unambiguously. Issues resulting from the development of modern information technologies become a platform for both discussion and scientific disputes. The currently observed processes cause a number of fears, which are often fully justified. The area of changes resulting from the dissemination of information techniques in many areas of human activity causes difficulties in indicating the field of an individual or collective life of the human individual, which would be left without the influence of these techniques. There is a view that current society is strongly dependent on technological consumption and interactivity in an environment where the development of multimedia techniques is a key factor threatening the human identity. It should be clearly indicated that powerful consequences are closely associated with the use of powerful technologies. Using them brings about specific effects, both positive and negative, because no technology, including information technology, is neutral. Of course, information technology can support, diversify a person's life, but also leads to isolation or alienation. It should be emphasized that a person should learn to use this technique consciously so that the human world is created by him and not by IT systems. At present, we can talk about technological "fascination" without considering the consequences of introducing new technology into our lives. It cannot be clearly pointed out that modern technologies are conducive to simplification and slowing down the pace of life. Of course, computer technologies do save time and to a certain extent facilitate life. However, what is to save time contributes to its "wasting", "devouring it". It is clearly visible that users of modern devices, which they use at home or at work, often indicate the problem of "lack of time". Current societies should look at the unplanned effects of changes brought about by this information technology. In the past, it took a long time for societies to become aware of the ethical and social implications of technological innovations, which also undoubtedly include information technology.

Today, the negative effects of information technology are almost familiar to us; hence we can prevent them to some extent (Szumera 2016, p. 519).

2. THE PRESENT DAY AND THREATS FOR HUMANS

The world economy since the 1980s has been described as a global economy. It is closely related to the development of the information society while at the same time determining the phenomena and global processes by the degree of the development of these societies. The vast majority of specialists in this field believe that the progress of globalization of the economy runs synchronously with the development of the information society. Contemporary information societies are subject to all effects of globalization. Contemporary information societies are subject to all effects of globalization. Let us also notice that the degree of development of information societies influences and determines the pace and nature of global processes. The price is the disintegration of traditional communities, which are replaced by "cyberspace" or rather by global culture. There is a drastic change in ways of thinking, acting, experiences and awareness. The network, the computer, or rather the ICT technology before our own eyes began to replace the traditional sources of power and prosperity.

Presenting the threats that stand behind the development of modern information technologies, it should be clearly indicated that it is not the information itself that constitutes a threat but an unwise and irresponsible selection of information as well as its use and application. Figure 1 shows the basic threats.

Figure 1: Basic threats (own elaboration)
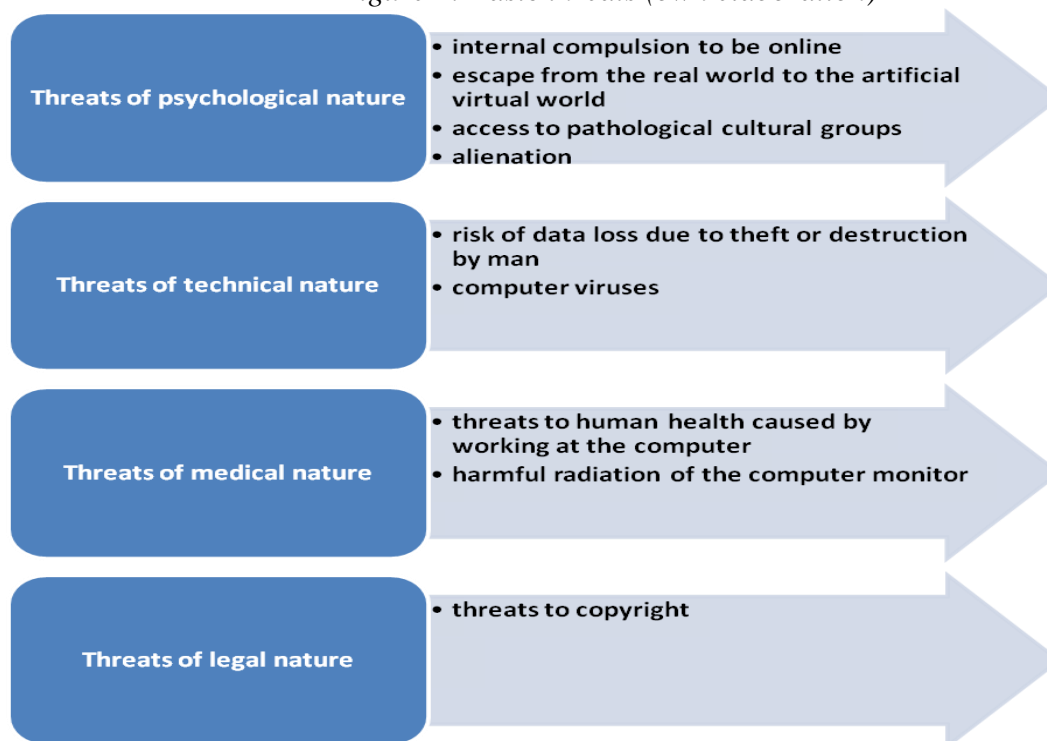
The problem of Internet addiction needs to be discussed more broadly (Young, 2015, pp. 3-17). In recent years, there has been an intense increase in this type of addiction. A person addicted to the Internet is a person for whom a computer or other mobile device is the basis of existence (Griffiths et al., 2016, p. 193-195). Such a person contacts other people through the network, and experiences elation. He has an impression that he participates in political, social and cultural life. Currently, it is already known that excessive use of the Internet has a negative impact on both the individual social sphere and relationships with loved ones.

For the sake of the Internet, these people give up direct contact with the others, neglect the family, and what is also very important - they lead a less active lifestyle, and this, as everyone knows, can be the cause of many diseases and ailments, reduced physical fitness and neglect in the physical development of the Internet user. The Internet is a key tool used by children and youth in the education process. The reason for using the Internet by young people is their openness and curiosity. It should be pointed out that the Internet is interesting and unknown to them. However, it is never entirely clear what is waiting on the net. The main reason for using the web is the subject matter and the content of the websites. The pages with information from various fields of knowledge can be found without the required specific skills. User-friendly websites and a time element are also important to the users of the Internet. There is no time pressure because at first glance - the network gives time and does not urge, and the information is available on the Internet around the clock without a time limit (Szymańska, 2008). The most important intellectual threats focus on disorders in the development and functioning of human cognitive processes. The first key source of these threats is a very intense increase in the amount of information that leads to the problem of information redundancy or information overload. Another problem is uncritical trust in the machine's capabilities. On the psychological level, the concepts of stress are a convenient form of describing the phenomenon of information shock. The excess of information and the rapid pace of their transmission - in comparison with the cognitive limitations of man, resulting from the functional properties of attention and memory - create a subjective sense of confusion, chaos, helplessness and even danger. All of these experiences are sometimes referred to as information stress, which is one of the varieties of cognitive stress (Furmanek 2014, pp. 20-48). A phenomenon that has recently increased significantly is the cyber violence which is characterized by (Furmanek, 2014, p. 37, Hinduja, Patchin, 2014):

- High level of anonymity. In the network, the perpetrator feels unrecognizable (although the anonymity on the Internet is only apparent and if there is a serious violation of the regulations or the law, the owner of the website or the police undertake the prosecution of the perpetrator);
- The speed of disseminated materials directed against the victim;
- Widespread network availability;
- A very dangerous speed of dissemination of materials harmful to the victim. Their widespread availability in the network and the difficulty in removing this type of violence can be very acute;
- Victims of cyber-violence are permanently vulnerable to attack. It can happen regardless of the time of day or place; it is difficult to predict when it will happen.

To sum up this part of the considerations, it should be pointed out that children and adolescents are the most vulnerable; their behaviours are subject to low social control. Often, parents or teachers do not notice the problem. This is the result of limited knowledge and limited experience associated with electronic media. In addition, this problem does not involve physical injury, which is the result of traditional violence.

3. CHILDREN ON THE NETWORK

Pointing to the threats associated with the Internet, it should be pointed out that the safety of everyone using the Internet depends not only on their knowledge, competence and mindfulness but also on the general level of security of the services provided and the care for the safety of other network users. In each age group, a gradual replacement of traditional services by digital ones is noticeable. Children and adolescents are very active users of information and communication technologies, which means that they also require special protection.

Internet security is a complex and heterogeneous area. These threats concern three elements (Livingstone, Haddon, Görzig, Olafsson, 2011):

- Content found on the web (content),
- As well as dangerous contacts (contact),
- And finally more complex online behaviours (conduct).

Selected types of threats to which children are exposed on the Internet are presented in Table1.

Table 1: Typology of online threats to children (Source: based on Livingstone, Haddon, Görzig, Olafsson (2011). (Livingstone, S., Haddon, L., Görzig, A., Olafsson, K. (2011). Final report, EU kids online II. London: LSE.)

	Sex	Aggression	Other threats	Commercial entities
Content – a child as a recipient	Pornography	Content showing violence	Other harmful content	Unethical marketing
Contacts – a child as a participant	Seduction (grooming)	Electronic aggression	Ideological or anti-health persuasion	Phishing of personal data
Conduct – a child as a perpetrator	Sexting	Perpetration of electronic aggression	Producing harmful content	Hacking, piracy

Another division of threats is threats by type:

- physical - sight, posture,
- mental - addiction, virtual reality detached from life,
- moral - easy (uncontrolled) access to information (e.g. instructions for building a bomb, drugs, pornography),
- social - unethical behaviour, anonymity, no inhibitions,
- intellectual:
  a) Uncritical trust in the machine's capabilities.
  b) "Information shock".

In addition, children are exposed to bullying, or mobbing in the school environment, i.e. long-term and negative actions of a student or group of students directed at another student or group of students, aiming to exclude the victim from the peer group. Cyber-bullying is a phenomenon of denigration, harassment, bullying and mockery on the web. In order to verify the content presented, a study was carried out to identify the problems children and parents face when they are users of the Internet. The survey was conducted among 117 parents of children who attend elementary schools. One of the questions was the self-assessment of parents in the field of internet literacy. Respondents' answers to the question regarding the level of the ability to use the Internet by parents are presented in Figure2.

Figure following on the next page

Figure 2: Opinion on the ability of the parents to use the Internet network in relation to children's skills (own study)
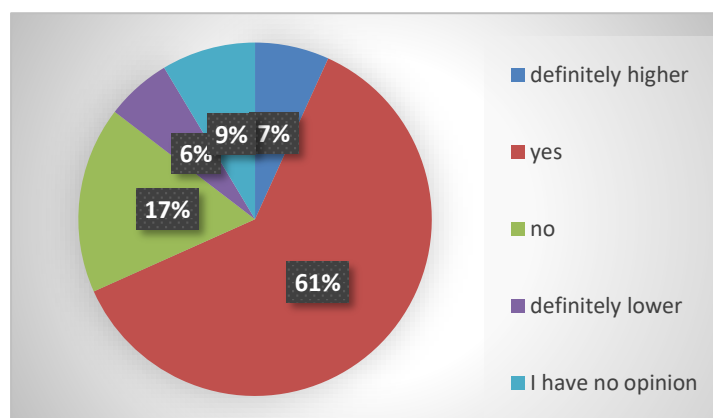
Most parents, 61.5%, or 72 people in the study group, said that they had higher network skills than their children, while 8 people, or 6.8%, stated that these skills were definitely higher. 27 people considered their skills as lower - 17.1% (20 people), and definitely lower, or 6% (7 people). The research concerned parents whose children are educated in primary school, which means that these skills of children are not yet high, however, parents often do not even realize the very high skills of children. Another question concerned the purpose of using the Internet jointly by children and parents. The results are presented in Figure 3.

Figure 3: Shared Internet usage by children and parents (own study)
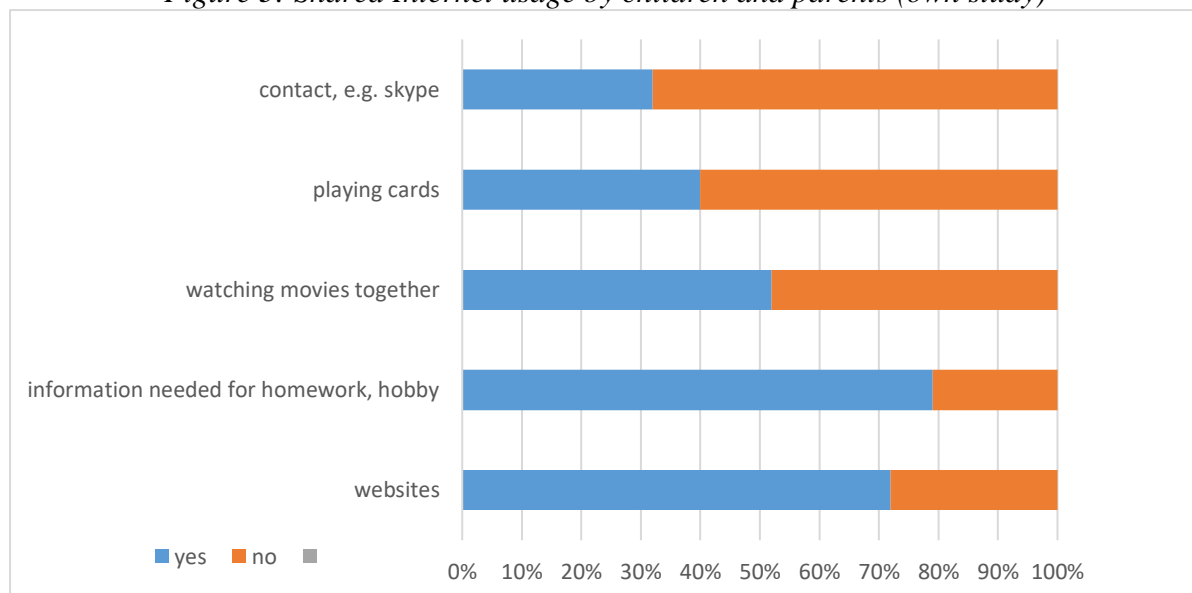
Most often, as much as 86% when using the Internet together, parents allow children to do what they want. This is, from the parents' point of view, a form of protection, because then the parent knows what the child is doing, however, on the other hand, the parent should be a mentor, and show, and interest the child with the possibilities of the Internet. A large part of the respondents also replied that together with the child they browse the websites - 72% and look for information related to school or hobby - 79%. Over 52% admitted to watching movies together, and 40% to playing games. 33% responded that they use the Internet together to communicate, for example, to talk to their families via Skype. Another question asked to parents was what principles of use, which constitute a form of protection, were introduced in their homes, as shown in Figure 4.

Figure 4: Forms of protection of children against online threats (own study)
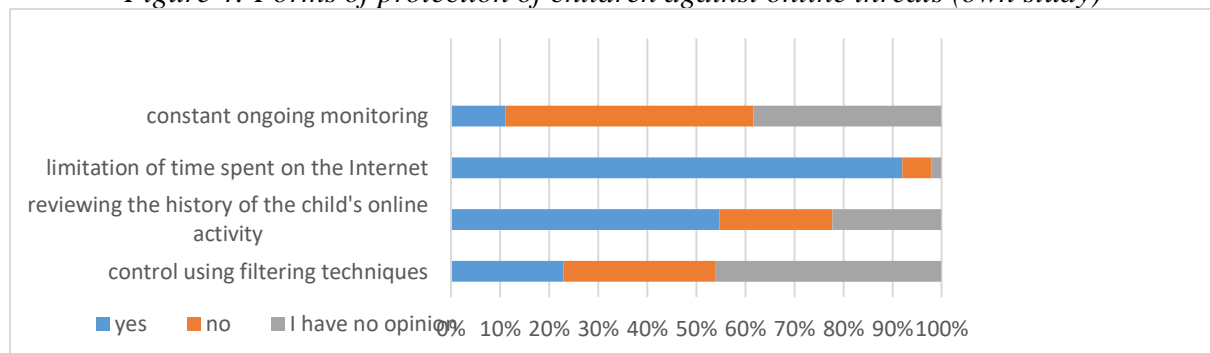
Most respondents, as many as 108 people (92%) indicated that the form of protection of children against the threats that they use is limiting the time of using the Internet by children. Of course, it protects if only against Internet addiction, but it does not protect against other threats because most of these parents do not know what the children do in that limited time online. In turn, 64 people, or 55% of parents, confirmed that they are reviewing the history of the child's online activity, while 23% (27 people) do not use this form of protection, and 22% (26 people) have no opinion on this topic. When it comes to controlling using filtering techniques, it is used by 23% of parents, while as much as 46% do not know if this method is used and 31% do not use it. Constant ongoing monitoring of the child's activities is carried out by 11% of parents, 50% do not use it, and 38% do not know. The large number of „I do not know" answers in the study shows that some respondents do not use the given solution, but take into account that maybe the other parent applies this method. This distorts the study, due to the fact that parents are often ashamed to admit to such a small amount of protection introduced by themselves.

Another question asked to parents was whether they spoke to their children on topics related to security on the Internet, as shown in Figure 5.

Figure 5: Talks with children about the threats in the network (own study)
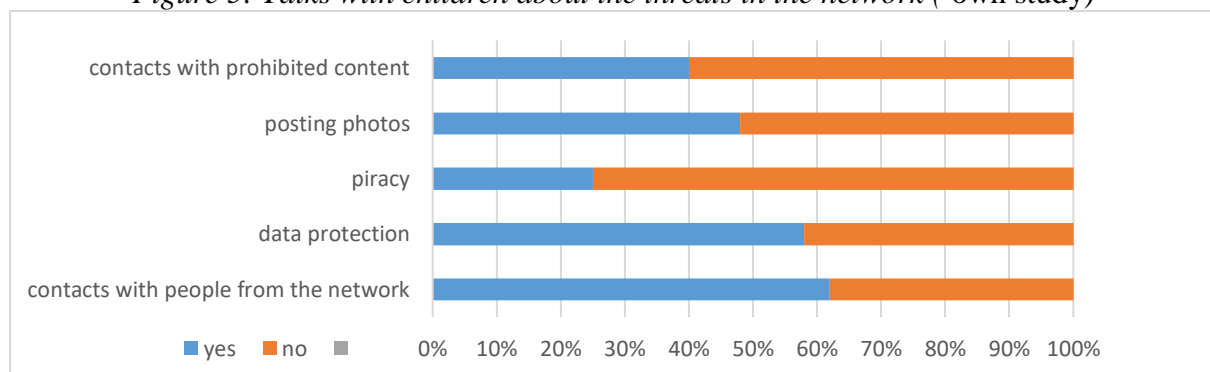
To the question about the topic regarding threats on the Internet, which parents chose to speak to their children about, the results show that 62% took up the topic of meeting people who were met online. 58% of parents pointed out to the children that they should not provide personal data on the web, while 48% took up the subject of posting photos and videos, while only 25% talked about piracy. Analyzing the thread of computer games, it should be noted that the awareness of individual pictographic markings referring to the content of the games is much smaller. It should be kept in mind that parents often have much less knowledge about the types of computer games and their content than their children. Parents in the discussions very often emphasized that they did not know how important it is to control children when they use the Internet (not only by setting the time frame for using the Internet).

What is more, they emphasized that from now on they would much more often monitor what content their children have contact with on the Internet. There are five basic categories of parental treatments aimed at protecting the child from the negative effects of the use of the Internet by them: active protection, passive protection, restrictions, common activities on the Internet and the use of technology (special software). These treatments refer in turn to: conversations with the child about what he does on the Internet - shared use of the Internet or common activity on the Internet - together with a child, e.g. playing an online game; Staying close to the child when he is surfing the Internet, - determining the rules by which the child can use the Internet, most often it is about rules limiting the time or way of using the Internet, installing software on the child's computer, filtering or blocking the Internet use in selected areas or providing insight into the child's activity history on the Internet. " In addition, in order to protect the child, it is necessary to identify the tools that, when used together, will strengthen activities in this area. These are technological, regulatory and educational tools that integrate all activities in the area of child protection. Figure 5 shows the model of protection of the child against the negative effects of using the Internet.

Figure 5: A model of protecting a child from the negative effects of using the Internet (own elaboration)
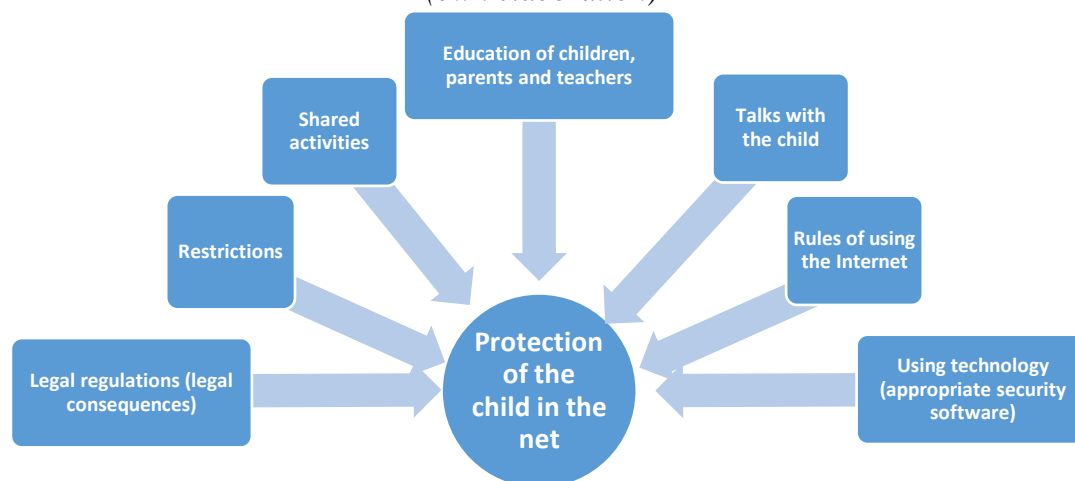
The presented model indicates a number of tools of a legal, educational and technological nature that, when used in parallel, can protect children from the negative effects of using the Internet. Appropriate relations with parents are also of great importance.

4. CONCLUSION

The problem of children's safety on the Internet requires a lot of action. The role of the state is to develop appropriate legal regulations that will be the foundation of the safe use of the Internet. It is also necessary to use appropriate information technologies in the form of security software. However, we should be aware that when these two tools fail, the most effective form of protection is the education of children, teachers and parents. Parents' education in the area of children's safety on the Internet, apart from the factor of knowledge transfer in the discussed area, should also focus on the role and method of communication with children and strengthening of common bonds. Insufficient level of digital competences of parents of students means that it is necessary to direct to them educational and information activities devoted to security in cyberspace, which should be an integral part of the school's statutory activity. To protect children and teenagers from online threats, parents themselves need to understand them better.

Many parents believe that the issue of modern threats in the context of uncontrolled use of the Internet by children does not concern them; however, they are not aware of how much time their children spend on the Internet. They also do not know any programs that increase the safety of using the Internet by children. This may indicate that there is still a need for, above all, a constant education of both parents and children, but also teachers about the threats lurking on the Internet. Many parents do not know anything about online threats to children and young people and do not take any educational measures regarding this sphere. All this leads to the conclusion that Internet space remains a potentially dangerous area for children.

LITERATURE:
1. Anderson, E. L., Steen, E., & Stavropoulos, V. (2017). Internet use and Problematic Internet Use: A systematic review of longitudinal research trends in adolescence and emergent adulthood. *International Journal of Adolescence and Youth*, *22*(4), 430-454.
2. Çikrıkci, Ö. (2016). The effect of internet use on well-being: Meta-analysis. *Computers in Human Behavior*, *65*, 560-566.
3. Czopek, J. (2016). Bezpieczeństwo i ochrona prywatności młodzieży w internecie w kontekście edukacji medialnej. *Zeszyty Naukowe Wyższej Szkoły Humanitas. Pedagogika*, (12), 67-73.
4. Furmanek, W. (2014). Zagrożenia wynikające z rozwoju technologii informacyjnych. Dydaktyka informatyki, 9, 20-48.
5. Gerow, J. E., Grover, V., Thatcher, J. B., & Roth, P. L. (2014). Looking toward the future of IT-business strategic alignment through the past: A meta-analysis. *Mis Quarterly*, *38*(4), 1059-1085.
6. Giménez-Figueroa, R., Martín-Rojas, R., & García-Morales, V. J. (2018). Business Intelligence: An Innovative Technological Way to Influence Corporate Entrepreneurship. In *Entrepreneurship-Development Tendencies and Empirical Approach*. InTech. Access 5.02.2018 https://www.intechopen.com/books/entrepreneurship-development-tendencies-and-empirical-approach/business-intelligence-an-innovative-technological-way-to-influence-corporate-entrepreneurship
7. Griffiths, M. D., Kuss, D. J., Billieux, J., & Pontes, H. M. (2016). The evolution of Internet addiction: A global perspective. *Addictive Behaviors*, *53*, 193-195.
8. Hejduk I. (2016). Rozwój technologii cyfrowych a wykluczenie społeczne, 64 ZNUV 2016;46(1);64-78
9. Hinduja, S., & Patchin, J. W. (2014). *Bullying beyond the schoolyard: Preventing and responding to cyberbullying*. Corwin Press.
   https://books.google.pl/books?hl=pl&lr=&id=Q9XHBAAAQBAJ&oi=fnd&pg=PT28&dq=cyberbullying&ots=rNMyMzHWC1&sig=iSASAapDSuJN5hKaD6HGqlgOYiI&redir_esc=y#v=onepage&q=cyberbullying&f=false
10. Kuźbik, P.(2014). Social media and the development of corporate social responsibility in sports organizations, [w:] J. Reichel (red.), CSR Trends. Beyond Business as Usual, Centrum Strategii i Rozwoju Impact, Łódź 2014, s. 191-214.
11. Luftman, J., Lyytinen, K., & ben Zvi, T. (2017). Enhancing the measurement of information technology (IT) business alignment and its influence on company performance. *Journal of Information Technology*, *32*(1), 26-46.
12. Martin, W. J. (2017). *The global information society*. Taylor & Francis.
13. Matulewski M.(2012). Technologie informacyjne i komunikacyjne w rolnictwie precyzyjnym, 87 ZNUS 2012; 87; 443-451.

14. Matulewski, M. (2010). Wpływ informacji i wiedzy na uzyskiwanie przewagi konkurencyjnej w dobie społeczeństwa informacyjnego naprzykładzie just-in-Time, 57 ZNUS 2010; 57; 519-526.
15. Norek, T. (2013). The knowledge management for innovation processes for SME sector companies. International Journal of Management, Knowledge and Learning, 2(1), 83–99.
16. Szumera, G. (2016). Człowiek a współczesne technologie informacyjne. *Zeszyty Naukowe. Organizacja i Zarządzanie/Politechnika Śląska*.
17. Szymańska, M. (2008). *Rola Internetu w procesie edukacji dzieci i młodzieży,* „Problemy Opiekuńczo-Wychowawcze", nr 6.
18. Young, K. (2015). The evolution of Internet addiction disorder. In *Internet addiction* (pp. 3-17). Springer, Cham.

PUBLIC-PRIVATE PARTNERSHIP IN IMPLEMENTING REVITALIZATION PROJECTS – POLISH EXPERIENCES IN THE CONTEXT OF THE SOLUTIONS APPLIED BY SELECTED EU COUNTRIES

Dagmara Hajdys
University of Lodz, Poland
dagmara.hajdys@uni.lodz.pl

Magdalena Slebocka
University of Lodz, Poland
magdalena.slebocka@uni.lodz.pl

ABSTRACT

Urban policy aimed at ensuring equal development and regeneration of degraded urban areas in the process of revitalization requires adequate financial means. The majority of local self-governments struggle with the problem of balanced budget. Therefore, in order to implement many public tasks, including those concerning revitalization, pooling of funds is needed. Public-private partnership can constitute a significant instrument used in the aforementioned pooling of funds since it enables combining budget funds with private capital. The PPP is a form of implementing public tasks recommended by the European Commission. The experiences of EU countries show that the PPP model constitutes an attractive format for carrying out revitalization projects. This may be substantiated by the projects implemented in Western Europe (Germany, Great Britain) as well as in East-Central Europe (Hungary). In Poland, the market of PPP projects is in the initial phase of development and it is dominated by the investments implemented by territorial self-government units. The objective of this paper is to present the results of the revitalization project of degraded urban areas carried out in Poland with the application of the PPP model in the context of the solutions adopted in selected EU countries. The research method applied in the paper consists of a study of literature on the subject, a presentation of the legal regulations with regard to revitalization and the PPP as well as an empirical analysis of the revitalization project carried out in the City of Sopot with the application of the PPP model. The project implemented in Poland is of a pioneer and hybrid nature. The experience gained during the project enabled the preparation of a set of "Good PPP practices in the area of revitalization in Poland", and is an inspiration for other cities, which translated into the implementation of another PPP project in revitalization.
Keywords: local government, public-private partnerships, revitalization

1. INTRODUCTION

One of the basic problems pertaining to local development consists in attractive but run-down city centres, post-industrial areas as well as post-military lands and housing estates. In order to restore the original socio-economic functions to these areas, two factors are required. On the one hand, local authorities have to establish a clearly defined policy and, on the other hand, particular financial resources need to be allocated in order to implement the said policy. Revitalization activities aimed at bringing back to life degraded urban areas is one of the main elements of the urban policy. Local authorities have to cope not only with deteriorating technical condition of various facilities but in many cases also with an economic decline and social problems. The process of revitalization, especially if it concerns heavily degraded urban areas, requires considerable financial outlays. At a time of permanent budget constraints, local authorities are increasingly forced to search for off-budget financing of public tasks. The aforementioned budget constraints are particularly evident in the case of revitalization.

Since revitalization processes are time-consuming and cost-intensive, territorial self-governments are not able to carry out all the necessary investments without additional sources of financing including *inter alia* the EU funds and private investors. The co-financing of revitalization projects by means of private capital is carried out in the form of a public-private partnership (PPP). The latest economic and financial crisis has resulted in the PPP format being particularly recommended by the European Commission (Commission of the European Communities, 2009) as a method of implementing public investments, including those connected with revitalization. The objective of the paper is to indicate the scope of socio-economic and environmental effects of the revitalization project of degraded urban fabric implemented in Poland with the application of the public-private partnership model. The analysis includes the amount of the EU funds and private capital allocated within the framework of the PPP. The following research methods were used for the purpose of this paper: an analysis of the literature on the subject, presentation of legal regulations with regard to revitalization and the public-private partnership as well as an empirical analysis of the revitalization project implemented by the City of Sopot with the application of the PPP model carried out on the basis of source materials.

2. PUBLIC-PRIVATE PARTNERSHIP AS A TOOL SUPPORTING THE PUBLIC SECTOR IN IMPLEMENTING INVESTMENTS AIMED AT INTENSIFYING LOCAL DEVELOPMENT

The augmentation of infrastructure as well the standard of services which meets the social expectations is one of the key elements of the economic development of each state. A public-private partnership is regarded as one of the tools enabling the attainment of the aforementioned goals. The PPP model was introduced in 1992 in the United Kingdom (Robinson, Scott, 2009, p. 181-197). A great variety of models which could be observed in practice made it impossible to formulate one unequivocal definition of a public-private partnership (Grimsey, Lewis, 2004; Hodge, Greve, Boardman (ed.), 2010, p. 6). As a result we may encounter numerous diverse definitions of a PPP. A PPP is commonly deemed to be a long-term contract between the public and private sector entered into in order to implement a project or render the services which are traditionally provided by the public sector. The fundamental objective of the cooperation between the sectors consists in providing financing for the processes related to designing, creating, regenerating, managing and maintaining infrastructure or in rendering services over a long-term period. In such relations, it is the private partner that takes on the majority of risks connected with implementing the project (Lopes, Caetano, 2015, p. 82; Rebeiz, 2011, p. 421; Morini, Leite de Campos, Marcondes de Moraes, Inácio Júnior, 2017, p. 3; Moszoro, 2005, p. 49; Brzozowska, 2010, p. 30; Hajdys, 2013, p. 44; European Commission, 2003, p. 1). A PPP is a response made by societies (economy and politics) to the civilizational challenges faced by all the democratic states of the market economy – both rich and poor. The response consist in finding a solution to the problem of how to satisfy growing social expectations with regard to the volume and standard of public services in the face of tightly constrained public resources. When contrasting a rapid pace at which social needs have been increasing for several decades with the financial capacity with regard to the expenditures required to satisfy the said needs, which are covered from the public means, one can notice an increase in crisis situations. The attempts at solving this problem by public authorities by opting out of the responsibility for the level and standard of rendered services (consisting in privatising a given type of services) did not turn out to be completely successful (Solheim-Kile, Lædre, Lohne, Meland, 2014, p. 234; Herpst, Jadach-Sepioło, 2012, p. 6). The recent economic and financial crisis has urged most states to take measures aimed at encouraging the private sector to finance, use and maintain public infrastructure and to render public services by implementing adequate institutional solutions (Demirag, Khadaroo, 2011, p. 294-310; Lopes, Caetano, 2015, p. 83; Solana, 2014,

p. 261; European Commission, 2009). These measures are reflected in the legal regulations introduced both at the national and international level. The European Commission as well as the European Investment Bank (EIB) have been supporting the development of the PPP model for many years (European Commission, 2003; European Commission, 2004; Commission of the European Communities, 2009; EIB, 2004). For instance, the EIB is the most significant creditor for PPPs in Europe and at the same time the founding institution of the European PPP Expertise Centre (EPEC), which is one of the advisory centres established in 2008 in order to offer assistance to the public sector in effective implementation of PPPs. A PPP is characterised by a complex structure. It requires a transparent legal and institutional framework, which will be easy to implement, as well as an efficient preparation by local authorities of high-quality projects and an allocation of adequate resources. It should neither be treated as a panacea for the budget problems of the public sector nor as an alternative to budget financing of public tasks. A PPP as a form of performing public tasks should be taken into consideration only in the situation when it is possible to prove that the application of this method will generate the best value for money in comparison to other attitudes. Within the framework of the PPP, all the parties concerned should allocate project risks adequately and attain operational effectiveness by focusing in particular on an affordable price and long-term budget accountability (Mullin, 2002, Rossi, Civitillo, 2014, p. 140; Yuan, Zeng, Skibniewski, Li, 2009, p. 260; Eurostat, 2016, p. 3; Słodowa-Hełpa, 2014, p. 12; Hausner, 2013, p. 9; Kotas, 2014, p.101). In the literature on the subject of the PPP many factors are enumerated which have led to its popularity as an alternative form of implementing the investment policy of the public sector not only with regard to building and managing infrastructure but also in terms of providing public services, i.e. sport and recreation, education, healthcare, car parks, thermal modernization, telecommunications (Cheung, Chan, Kajewski, 2009; Mota, Moreira,2015, p. 1565-1567; Hajdys, 2013, p. 41-44; Jachowicz, 2015, p. 77-81; Hausner, 2013; Korbus (ed.), 2017). In the recent years, the PPP potential has been made use of in the sector of revitalization. Revitalization is treated as a factor which can stimulate local development, defined as bringing positive changes to an urban area, while, at the same time, taking into consideration the needs, preferences and hierarchies of values relevant from the point of view of the local community. Due to their complex structure and comprehensive character revitalization projects require significant financial outlays. At a time of budget constraints, local authorities are forced to search for alternative methods and this is where the interest in the PPP model comes from.

3. REVITALIZATION AS A DIRECTION WHICH SUPPORTS THE DEVELOPMENT OF CITIES IN THE EUROPEAN UNION AND IN POLAND

Europe is one of the most urbanised continents in the world. There are 345 cities with the population over 100,000 inhabitants in the territory of Europe and as many as 23 cities with the number of inhabitants exceeding 1 million people. Moreover, 56% of European urban dwellers, i.e. approximately 38% of the total population of Europe, reside in small and medium cities, where the number of inhabitants ranges from 5,000 to 100,000 (Cities of tomorrow, 2011, p.2). According to the UN estimates, by 2050 almost 70% of the population will dwell in urban areas and this percentage is bound to increase (World Urbanisation Projects, 2010). In 2017 in Poland 23,126,000 people lived in cities, which accounts for 60% of the overall population (Central Statistical Office, 2017, p.118). Modern cities play an important role not only in the social but also in the economic life. There exists a consensus as to the fundamental principles governing the future development of cities and territorial development which should (Cities of tomorrow, 2011, p.6) be founded on sustainable economic growth and territorial organisation of activities and rely on the assumption that the city structure is polycentric. It should be based on powerful metropolitan regions and other urban areas which may provide an easy access to the services of general economic interest.

It should be characterised by a compact building pattern, and restricting of the uncontrolled urban sprawl as well as by a high level of environmental protection within cities and in their surroundings. One of the elements of the aforementioned consensus are revitalization activities which, apart from the improvement of the quality of life of the residents of a particular degraded area, are primarily aimed at supporting local development defined, first and foremost, as a long-term process of change with an intentional character, which is focused on an intended improvement in the current state. According to E.J. Blakely, local development refers to "the process in which local governments or/ and community-based organisations engage to stimulate or maintain business activity or employment. The principal goal of this engagement is to develop local employment opportunities in sectors that improve the community using existing human, natural and institutional resources."(Blakely, 1989, pp. 57 – 72) Generally, it can be stated that local development encompasses changes within the framework of mutually interconnected elements such as spatial environment (geophysical resources, raw materials or climate), spatial structure (urban capital, infrastructure), human capital (population, health, the level of security) and organisational capital (technological or socio-economic systems). The amelioration of the state of environment and the improvement in the standards of living entails inter alia: spatial development activities in unused lands with the application of new investments as well as enhancement of the spatial development of degraded areas (urban, post-industrial and post-military) within the framework of revitalization processes. In order to solve the plethora of socio-economic as well as architectural and town-planning problems, which emerged in cities as a result of progressive degradation of the urban fabric, it was necessary to harmonise regulations and conduct an integrated territorial policy of the European Union with regard to cities. References to common guidelines for urban policy may be found inter alia in the following strategic documents: the European Spatial Development Perspective (1999), the Lisbon Strategy (2000), Acquis URBAN (2005), URBACT I, II and III, the Leipzig Charter (2007) or the 2030 Agenda for Sustainable Development (2012). In Poland the issues connected with revitalization were regulated in the document entitled the National Urban Policy 2023 (Krajowa Polityka Miejska, 2015) as well as in the Revitalization Act (Ustawa, 2015). In many countries in the European Union drafting urban development plans has become a common practice. Some references concern degraded areas, thus pointing to the significance and relevance of revitalization processes (Sustainable Urban Renewal, 2015, p. 3). A thoroughly prepared and effectively implemented revitalization process may constitute a powerful development stimulus and may contribute to an all-embracing improvement in the quality of life. The essence of revitalization is recovering of degraded areas from a crisis condition which is carried out in a comprehensive manner by pursuing integrated activities for the benefit of the local community, space and economy. (www.mib…) One of the flagship examples of applying the PPP in a revitalization project is the Bottrop investment in the post-industrial Ruhr Area in Germany. The city has a long cultural and economic tradition of coal-mining and industrial activity. However, due to globalization processes accompanied by strict environmental requirements it was forced to change its investment policy. By means of an active public-private partnership as well as engaging the local community it has changed into a smart city by launching 200 projects concentrated on the climate-friendly regeneration of the urban area (Mysiorski, 2015, p. 66). Another example of using the PPP model in revitalization was the investment launched in Grainger Town in Newcastle upon Tyne in the United Kingdom. The value of the undertaking amounted to 226.94 m EUR, out of which 182.46 m EUR was provided by private investors. As a result of the investment implemented on the area of 36 ha, 121 buildings were refurbished. Another project carried out in Nottingham Lace Market in the United Kingdom is also worth mentioning. This undertaking was completed with the application of budget means, the EU funds as well as with the participation of private investors within the PPP model.

As a result of the revitalization activities carried out in this area, it is now a thriving retail centre, residential area and a cultural facility with cinemas and media centres (Macdonald S., Cheong C. 2014. pp.20-35). The project of regenerating a district along with the Versailles-Chantiers Railway Station can be pointed out as an interesting example of cooperation between the public and private sector with the application of the PPP model in France. The Nexity company won the tender. The venture included inter alia: the construction of a parking lot for cars and a bicycle parking station, the construction of a shopping centre, a cinema complex, an office building and a hotel. The revitalization project of Piscine Molitor situated in the 16th arrondissement (district) of Paris may serve as another example. In the first phase, the City launched a tender for the site development project in order to collect information on numerous possible ways of spatial development within the framework of this facility and the ways in which to achieve an effective economic calculus. Therefore, as early as at the conception stage of the project a consortium was founded, which consisted of the following companies: Bouygues - the contractor, Accor – the hotel services provider and Colony Capital – the investor (Francusko Polska Izba Gospodarcza, 2009). The Corvin Quater project carried out in Budapest is considered to be the largest revitalization undertaking of urban areas in East-Central Europe. The value of the investment amounted to 922 m EUR, out of which 850 m EUR was provided by a private entity and 72 m EUR was contributed from the public funds. As a result of revitalization in the area of 22 ha, the following facilities were created: a business centre, a retail and entertainment centre as well as food services and residential facilities. Thus, a space in the centre of Hungary's capital was redeveloped in a comprehensive manner (Mysiorski, 2015, p. 66). Revitalization processes are of a complex character as they embrace legal, architectural, social and economic aspects. Moreover, the contrary interests of particular groups of beneficiaries, i.e. local authorities, residents or entrepreneurs are pointed to. Due to a long time horizon, revitalization activities require an adequate determination of the sources of financing. The most substantial portion of contributions should come from the budget of the territorial self-government, where the main sources of income are tax revenues and local charges as well as income from municipal assets and from the redistribution of funds between the state budget and the territorial self-government budget (Ryszko, 2012, p. 131). It should be realised that the budget means at the disposal of the self-government unit are insufficient in relation to the scale of needs. Local authorities are forced to search for alternative sources of financing revitalization. Revitalization activities may be financed from the following sources (Ślebocka, 2016, p. 466; Ślebocka, Tylman, p. 141):

− public means:
  - of foreign origin (European funds, foreign non-refundable resources, loans granted by international financial institutions),
  - of national origin (government operational programmes, national funds),
  - of regional and local origin (voivodeship programmes and contracts, regional and local funds, *gminas* budgets);
− non-public means:
  - of commercial origin (bank loans, leasing, issuing of bonds, bank guarantees and loan subsidies),
  - of private origin including social participation,
− combinations of private and public means, i.e. the public-private partnership.

In the recent years, the PPP has increasingly gained in significance. The solutions offered by the EU (Rozporządzenie Rady, 2013) as well as the national solutions contribute to this increasing importance since they enable to combine private capital in the partnership model with European funds within the framework of the so called hybrid financing (Ustawa, 2014).

4. PUBLIC-PRIVATE PARTNERSHIP IN REVITALIZATION PROJECTS – POLISH EXPERIENCES

The statistics collected by the European PPP Expertise Centre (EPEC) with regard to European countries indicate that the value of PPP projects in 2016 amounted to 12 billion EUR for 69 new investments launched. The sectors in which there were most projects encompassed: education (27), healthcare (15), transport (11), telecommunications (4), environmental protection (4). There was also a pioneering project in the military sector (Great Britain). Single projects concerned social welfare, recreation and culture as well as public services. In 2016 Great Britain was the market leader with 28 new projects launched with the total value of 3.8 bn EUR. The second largest market with regard to the PPP was the French market with 16 projects worth 2.4 bn EUR, followed by the Turkish market with 5 projects with the total value of 1.7 bn EUR (EPEC, 2017, p.1-3). In the years 2012-2016, Great Britain implemented almost 120 projects worth 24.8 bn EUR, France – 70 projects worth 8.9 bn EUR and Germany – 38 projects with the total value of 3.5 bn EUR. Furthermore, for the first time there appeared on the European market projects launched by Slovakia, Portugal, Finland, Poland and Croatia. The total value of these debut projects amounted to 1.9 bn EUR (EPEC, 2017, p.6). In Poland the issues connected with the cooperation between the public and the private entity were regulated in 2008 in the Act on public-private partnership (Ustawa, 2008). Over the period of 8 years, when the regulations have been in force, the overall number of concluded PPP contracts has amounted to 112 and their total value has been 5.6 bn PLN (Korbus (ed.), 2017, p. 9). The specific character of the Polish market, which distinguishes it from the European market, consists in a low value of projects. In the majority of projects the value ranges from 5 m PLN to 15 m PLN. It ensues from the fact that the market is dominated by territorial self-government units as major providers of public services. The experience gained so far by self-governments results from the pragmatic and cautious attitude to the collaboration with the private entity within the framework of the partnership model. The PPP projects related to sport, recreation and tourism have been the most popular – 17 contracts, followed by transport infrastructure – 15 contracts, and energy efficiency, water and sewage management and telecommunications (14 and 13 contracts respectively). The niche sectors are as follows: education (5), healthcare (4), revitalization (2), power industry and housing with one concluded contract each. In the nearest future revitalization may become one of the most popular areas in which the PPP will be applied. One argument in favour of this prediction is the amendment to the Act on public-private partnership made in Art. 46 of the Revitalization Act of 2015. The said amendment makes it possible to classify a part of remuneration paid to the private partner as the assets-related expenditure of the public entity, as a result of which the public debt is not affected (Sobiech-Grabka, Herbst (ed.), 2015, p. 31), and to co-finance the PPP projects by means of the cohesion policy funds in the financial perspective 2014-2020, which makes PPPs hybrid projects (Ustawa, 2014). According to the data collected in the data base on PPP projects, by the end of 2016 only seven projects in the revitalization sector had been registered in Poland, which accounted for 3% of the total number of projects. Two of them are in the construction phase, two are going through the bidding procedures, whereas further three projects are in the conceptual phase subject to preliminary analyses (Table1).

Table following on the next page

Table 1. PPP projects in the revitalization sector (Bazy projektów PPP, 2017)

Public entity	Project name	Term of project (in months)	Project value (in thousands PLN)	Project status
the City of Sopot	Land development in the area of the railway station in Sopot along with neighbouring areas	149	100 000	contract management
the City of Gdańsk	Land development in the area of the northern tip of the Spichrzów Island in Gdańsk	204	400 000	construction
the City of Gdańsk	Land development in the area of the former tram depot in the Lower Town district in Gdańsk	no information	350 000	negotiations
the City of Mikołów	Redevelopment of the quarter adjacent to the Market Square from the south-western side	no information	9 300	bidding procedure
the *Gmina* and the City of Lubomierz	"The Village of Kargul and Pawlak" Recreational and Shopping Centre	no information	5 000	preliminary analyses
the City of Wrocław	New land development in the area of the Społeczny Square in Wrocław	no information	5 000 000	plan
the city of Jasło	Regeneration of the railway station area	no information	11 000	plan

The flagship PPP project in the revitalization sector in Poland is the investment project implemented by the City of Sopot "Land development in the area of the railway station in Sopot along with neighbouring areas with the participation of private entities". Pooling of funds has been applied in the implementation of this project. In January 2012 the authorities of the city of Sopot concluded a public-private partnership contract with a private partner Bałtycka Grupa Inwestycyjna S.A. for implementing the investment consisting in "regeneration of urban built-up areas, land development in the railway station neighbouring areas, attainment of spatial order in the city centre, modernisation of the road layout for local public transport, increasing the attractiveness of the city for tourists, spatial development of the green areas belonging to the gmina". After the PPP project had been given a positive opinion, Bank Gospodarstwa Krajowego made a decision to grant the JESSICA loan (within the framework of the Regional Operational Programme for Pomeranian Voivodeship 2007 – 2013), which enabled raising of financial means from different sources. The value of the project amounted to 113.76 m PLN (the EU funding granted within the framework of the JESSICA programme amounted to 42 m PLN, the contribution made from the city budget totalled 3.1 m PLN, and the amount of 68.660 m was provided by means of an investment loan obtained by the private partner). The term of the contract is 11 years, including an 8-year period of managing the investment. Due to the hybrid nature of the project, which consists in pooling the funds provided by private investors and European Union funds, the share accounted for by the refundable EU instrument JESSICA was 37%, and the dominant source of finance in the case of the railway station revitalization project were the funds provided by the private partner, which amounted to 60.3%. As a result of the investment, a building complex was constructed.

It performs the functions of: a shopping centre, a services providing facility, a railway station, a two-storey parking lot and an overground car park. It also enabled to direct traffic in the vicinity of the railway station underground and to construct a road directing traffic from the underground car parks. It was also possible to modernise the transport layout, which resulted in making the railway station neighbouring areas an integrated rail and road hub. The investment was put into service in December 2015. The implementation of the project has brought about the following effects (Ministerstwo Rozwoju, 2016, p.13):

1. in the economic sphere: increasing the attractiveness of the site – a functional showcase for the city, the construction of a glamorous railway station, generating additional tourism, attracting investors, founding new businesses;
2. in the social sphere: the construction of a new square in the site where formerly neglected railway station buildings and a pedestrian passage were located, which will enable the organisation of city events and cultural events, as well as the amelioration of the urban standards – the site is visually attractive, friendly and safe (C.C.T.V. monitoring), facilitating passengers' access to the Internet (WI-FI) and to innovative network services, job creation, investing in visually attractive greenery and modern street furniture, emphasis put on security and pedestrian traffic, facilities for the disabled;
3. in the environmental sphere: optimal use of energy, spatial development of green areas; promoting eco-friendly means of transport, limiting exhaust fumes emissions, directing all traffic on Dworcowa Street underground, relocating the taxi, car and tourist coach stand.

The revitalization project with the application of the PPP model which is still being implemented in Sopot is an investment which offers a comprehensive solution to the problems diagnosed in this area. It has a substantial impact on: the improvement of the spatial order, the creation of the conditions conducive to economic development, the elimination of the problem of unemployment, the creation of friendly sites for residents and tourists. The project is of a pioneer character since, so far, there have been no PPP projects in the revitalization sector, thus making it impossible to draw up a set of good practices in this sphere. The implementation of the project in Sopot enabled the working out of the procedures thanks to which the pooling of various types of funds in the PPP model was possible. The types of funds embrace the following: city budget means, refundable EU instruments such as JESSICA and the private capital. The revitalization project implemented with the application of the PPP model has paved the way for further investments, which is manifested in the revitalization project in the city of Gdańsk and the conceptual and bidding works which are under way in five cities. Other revitalization projects, the one which is being implemented with the use of the PPP model as well as those planned, are supposed to eliminate the defined problems and constitute a prerequisite for the socio-economic development of urban areas. For the time being drawing further conclusions is impossible due to the fact that the conceptual and bidding works are under way.

5. CONCLUSION
Revitalization processes, with the scope of operation embracing the social, economic and environmental sphere, require substantial budget outlays. In many cases, the budgets at the disposal of local authorities are not sufficient to cover the costs of revitalization, which necessitates raising off-budget funds. In Europe, there are numerous examples of the application of the public-partnership format. In Poland, the PPP market is in the initial phase. It is manifested in the level of effectiveness of the concluded contracts in relation to the number of instigated proceedings, which amounts to only 25%, whereas the said level in Europe amounts to 75%. The projects implemented in Poland so far concern the following areas: sport and recreation, car park infrastructure, energy effectiveness, water and sewage management

and telecommunications. The adoption in 2015 of legal regulations with regard to revitalization created favourable conditions for the application of the PPP model in revitalization. The creation of the institutional basis led to the implementation of two revitalization projects and drafting of further projects. Moreover, it should be emphasised that the successful revitalization project launched by the City of Sopot has enabled to work out good practices with regard to hybrid solutions which consist in pooling of budget means, private capital and the EU financial support funding within the framework of the PPP. The positive experience gained from the completed investment may constitute a stimulus which will spur dynamic development of the PPP market in the sphere of revitalization.

LITERATURE:
1. Blakely E.J., (1989). *Planning Local Economic Development. Theory and Practice*. London: SAGE Library of Social Research.
2. Brzozowska, K. (2010). *Partnerstwo publiczno-prywatne w Europie, cele, uwarunkowania, efekty.* Warsaw: Wydawnictwo Fachowe CeDeWu.
3. European Commision (2003). *Guidelines for Succesful Public Private Partnerships.* Bruksela.
4. Grimsey, D. Lewis, M.K. (2004). *Public Private Partnerships: The Worldwide Revolution in Infrastructure Provision and Project Finance*. Cheltenham: Edward Elgar Publisher.
5. Hajdys, D. (2013). *Uwarunkowania partnerstwa publiczno-prywatnego w finansowaniu inwestycji jednostek samorządu terytorialnego.* Lodz: Wydawnictwo Uniwersytetu Łódzkiego.
6. Hausner, J. (2013). *Raport o partnerstwie publiczno-prywatnym w Polsce* (edition). Warsaw: Centrum PPP.
7. Herbst, I., Jadach-Sepioło, A. (2012). *Raport z analizy danych zastanych*. Warszawa: PARP.
8. Hodge, G., Grave, C., Boardman, A.E. (2010). *International Handbook on Public-Private Partnerships*. Cheltenham: Edward Elgar: A Family Business in International Publishing.
9. Jachowicz, A. (2015). *Partnerstwo publiczno-prywatne narzędziem efektywnej realizacji zadań publicznych,* Warszawa: Difin.
10. Korbus, B. (2017). *Analiza rynku PPP 2016*. Warszawa: Ministerstwo Rozwoju.
11. Moszoro, M. (2005). *Partnerstwo publiczno-prywatne w monopolach naturalnych w sferze użyteczności publicznej*. Warsaw: Wydawnictwo Szkoły Głównej Handlowej.
12. Mullin, S.P. (2002). *Public-Private Partnerships and State and Local Economic Development: Leveraging Private Investment,* U.S. Economic Development Administration.
13. Sobiech-Grabka,K., Herbst, I. (ed.) (2015) *Przegląd przedsiębiorstw na rynku PPP w Polsce.* Warszawa: PARP.
14. Demirag, I., Khadaroo, I. (2011). *Risks and the financing of PPP: Perspectives from the financiers*. The British Accounting Review 43.
15. Lopes, A.I., Caetano, T.T. (2015). *Firm-level conditions to engage inpublic–private partnerships: What can we learn?*. Journal of Economics and Business 79.
16. Mota, J., Moreira, A.C. (2015). *The importance of non-financial determinants on public–private partnerships in Europe*. International Journal of Project Management 33.
17. Mysiorski, B. (2015). *Partnerstwo publiczno-prywatne w rewitalizacji*. Europejski Doradca Samorządowy nr 1(26).
18. Oechler Solana, E. F. (2014). *Public private not-for-profit partnerships: delivering public services to developing countries*. Procedia Engineering 78.
19. Rebeiz, K.S. (2011). *Public–Private partnership risk factors in emergingcountries: BOOT illustrative case study*. Journal of Management in Engineering 28 (4).

20. Robinson, H.S., Scott, J. (2009). *Service delivery and performance monitoring in PFI/PPP projects*. Construction Management and Economics 27(2): p. 181-197.
21. Rossi, M., Civitillo. R. (2014). Public Private Partnerships: a general overview in Italy. Procedia - Social and Behavioral Sciences 109.
22. Słodowa-Hełpa, M. (2014). *Zagraniczne doświadczenia w zakresie partnerstwa publiczno-prywatnego inspiracje i rekomendacje dla Polski*. Warszawa: BAS 3 (39)
23. Yuan, J., Zeng, A.Y., Skibniewski, M.J., Li, Q. (2009). *Selection of performance objectives and key performance indicators in public–private partnership projects to achieve value for money*. Constr. Manage. Econ. 27 (3).
24. Baza projektów PPP, Retrieved 29.01.2018 from https://www.ppp.gov.pl/Aktualnosci/Documents/Analiza_rynku_PPP30_06_2017.pdf.
25. Central Statistical Office (2017). *Population in Poland, Size and Structure by territorial division*, as of June 30, 2017, Statistical Information and Elaborations, Warsaw.
26. Commission of the European Communities (2009). *Mobilising private and public investment for recovery and long term structural change: developing Public Private Partnerships.* Brussels: COM(2009) 615
27. EPEC. (2017). *Market Update Review of the European PPP Market in 2016*. Luksemburg.
28. European Commission. (2004). *Green Paper on public-private partnerships and Community law on public contracts and concessions*, Brussels: COM/2004/327
29. Eurostat, (2016). *A Guide to the Statistical Treatment of PPPs*. Luxembourg
30. Ministerstwo Rozwoju. (2016). *Projekt hybrydowy współfinansowany ze środków zwrotnych JESSICA „Zagospodarowanie terenów dworca PKP S.A. w Sopocie oraz sąsiadujących z nimi terenów”*. Warszawa.
31. World Urbanisation Prospects (2010): The 2009 Revision, The United Nations, Department of Economic and Social Affairs, the Population Division.
32. Cheung, E., Chan, A.P., Kajewski, S., (2009). *Reasons for implementing public private partnership projects: perspectives from Hong Kong, Australian and British practitioners*. J. Prop. Invest. Financ. 27 (1), 81–95. Retrieved 23.01.2018 from https://eprints.qut.edu.au/20867/1/c20867.pdf
33. Francusko Polska Izba Gospodarcza, Retrieved 25.02.2018. http://ccifp.pl/promocja-ppp-wyjazd-studyjny-do-francji/
34. Herbst I., Jadach-Sepioło A. (2012), *Raport z analizy danych zastanych, na potrzeby „Analizy potencjału podmiotów publicznych i przedsiębiorstw do realizacji projektów Partnerstwa Publiczno-Prywatnego”,* Warszawa, Retrieved 10.01.2018 from, https://www.parp.gov.pl/files/74/81/545/13735. pdf,
35. Kotas, A. (2014). *Partnerstwo publiczno-prywatne jako forma finansowania inwestycji publicznych na przykładzie budownictwa nieruchomości komunalnych*. Katowice: Wydawnictwo Uniwersytetu Ekonomicznego w Katowicach. Retrieved 23.01.2018 from https://www.ue.katowice.pl/fileadmin/_migrated/content_uploads/06_01.pdf
36. Macdonald S., Cheong C. (2014), *The Role of Public-Private Partnerships and the Third Sector in Conserving Heritage Buildings,* Sites, and Historic Urban Areas The Getty Conservation Institute Los Angeles, Retrived 20.02.2018 http://www.getty.edu/conservation/publications_resources/pdf_publications/pdf/public_private.pdf
37. Morini, C., Leite de Campos, M., Marcondes de Moraes, G. H. S., Inácio Júnior E. (2017) *A performance model for Public–Private Partnerships: the authorized economic operator as an example*, Strategy and Business Economics, p. 3. Retrieved 23.01.2018 from https://www.sciencedirect.com/science/article/pii/S0080210717300304.

38. Ryszko A. (2012). *Analiza możliwości finansowania rewitalizacji terenów przekształconych antropogenicznie na obszarach górniczych*, „Zeszyty Naukowe Politechniki Śląskiej", Organizacja i zarządzanie, z. 62, nr 1875, Katowice
39. Solheim-Kile, E., Lædre, O., Lohne, J., Meland Ø.H. (2014): Proceedings IGLC-22,Oslo, Norway. Retrieved 23.01.2018 from https://iglcstorage.blob.core.windows.net/papers/attachment-0c3b09b3-06ad-4dd7-ac6f-099456fcc2f2.pdf
40. Ślebocka M. (2016). *Rola i znaczenie PPP w finansowaniu przedsięwzięć rewitalizacyjnych*, w: Prace Naukowe Uniwersytetu Ekonomicznego we Wrocławiu, Wydawnictwo Uniwersytetu Ekonomicznego we Wrocławiu, Wrocław
41. Ślebocka M, Tylman A. (2016) *Krajowa Polityka Miejska a finansowanie rewitalizacji obszarów zdegradowanych*, w: Finanse i Prawo Finansowe, Journal of Finance and Financial Law, vol. III, no3
42. Cities of tomorrow, Challenges, vision, ways of forward. (2011). European Union, regional Policy, Luxembourg: Publications Office of the European Union, http://ec.europa.eu/regional_policy/sources/docgener/studies/pdf/citiesoftomorrow/citiesoftomorrow_final.pdf
43. Krajowa Polityka Miejska 2023. (2015), Warszawa. https://www.mr.gov.pl/media/10252/Krajowa_Polityka_Miejska_20-10-2015.pdf
44. KARTA LIPSKA na rzecz zrównoważonego rozwoju miast europejskich. (2007). http://www.sarp.org.pl/pliki/karta_lipska_pl.pdf
45. Sustainable Urban Renewal. (2015), European Investment Bank, p. 3, https://publications.europa.eu/en/publication-detail/-/publication/ab40a5da-e912-41ec-9011-db656979b43b/language-en
46. The 2030 Agenda for Sustainable Development (2012). https://ec.europa.eu/europeaid/policies/european-development-policy/2030-agenda-sustainable-development_en
47. The ‚Acquis URBAN' Using Cities' Best Practises for European Cohesion Policy, Common Declaration of URBAN cities and players at the European Conference "URBAN Future" on June 8th and 9th, 2005 in Saarbrücken (Germany), URBAN FUTURE 2005, http://ec.europa.eu/regional_policy/archive/newsroom/document/pdf/saarbrucken_urban_en.pdf
48. The Lisbon Strategy 2000-2010, (2010) an analysis and evaluation of the methods used results achieved, Final report, Directorate-General for International Policies, Policy Department Economic and Scientific Policy, EMPL http://www.europarl.europa.eu/document/activities/cont/201107/20110718ATT24270/20110718ATT24270EN.pdf
49. Ustawa z dnia 18 grudnia 2008 r. *o partnerstwie publiczno-prywatnym* (2008). Dz. U. z 2015, poz. 696.
50. Ustawa z dnia 29 sierpnia 2014 r. *o zasadach realizacji programów w zakresie polityki spójności finansowanych w perspektywie finansowej 2014-2020* (2014). Dz. U. z 2014, poz. 1146.
51. Ustawa z dnia 9 października 2015 r. *o rewitalizacji* (2015). Dz. U z 2015 r. poz. 1777
52. http://mib.gov.pl/2-rewitalizacja.htm
53. http://urbact.eu/#,
54. https://www.ewt.gov.pl/strony/o-programach/przeczytaj-o-programach/programy-europejskiej-wspolpracy-terytorialnej/urbact-iii/

MODERN TENDENCIES IN EXPERIENTIAL MARKETING: MUSEUMS USING AUGMENTED REALITY (AR) TO CONVERT YOUNG AUDIENCES INTO AMBASSADORS OF LOCAL CULTURE

Ecaterina Grajdieru Coman
Transilvania University of Braşov, Romania
ecaterina.grajdieru@unitbv.ro

Catalina-Ionela Rezeanu
Transilvania University of Braşov, Romania
catalina.rezeanu@unitbv.ro

Florin Nechita
Transilvania University of Braşov, Romania
florin.nechita@unitbv.ro

Claudiu Coman
Transilvania University of Braşov, Romania
claudiu.coman@unitbv.ro

ABSTRACT

In a more and more globalized and competitive world, technological advancements are spreading more rapidly. At the international level, an increaseing number of scholars agree that emerging technologies like AR have a promising future in various domains, from education to health, retail, urbanism or tourism. Recently, museums with international reputation have started to apply modern experiential marketing tools to enhance visitors' satisfaction. Even so, in this new transnational context, we still do not have a definite answer to the question of how modern technologies like AR could bridge the gap between local and global culture. We argue the answer lies in the propensity of young audiences to accept museums can be modern and innovative and become ambassadors of museums exhibitions, when these local institutions valorizing the past are willing to adapt to global technologies of the future. The plot of this project was triggered by the fact that, for the first time in Romania, a local museum (the memorial house of the family who wrote the national anthem) introduced AR technologies as an innovative solution to promote national heritage. We conducted a study to assess museum visitors` experiences, by applying a survey based on various marketing scales on a sample of 400 pupils and students after they visited a local museum exhibition with AR technologies. By running regression analyses, we evidenced the factors that predict both the tendency of pupils and students to recommend the museum exhibitions using AR technologies and to associate the museum with the attributes modern and innovative. We discuss the significance and challenges of these results for the field of experiential marketing and draw their implications for national and global economies in general, and management of tourism, in particular.
Keywords: Brand ambassador, Cultural marketing, Interactive experience, Multisensory experience, Museum brand image

1. INTRODUCTION
In a more and more globalized and competitive world, innovation is an important criterion in the emergence of new technologies (Huang, 2014). Among them, AR technology is believed to be a proper tool for the globally networked society (Squire, 2010). Recently, AR technologies started to be adopted in various fields and scholars highlight their increasing potential to be implemented in the tourism domain (Hassan, Rahimi, 2016), and especially for enhancing

visitors` experience of museum exhibitions (Jung et al, 2016; Chang et al, 2014), not only science museums (Yoon, Wang, 2014) or art museums (Leue et al., 2015), but also history museums (Barry et al., 2012). Moreover, in the new global competitive world museums have been starting to focus on building their brands to stay relevant (Belenioti, Vassiliadis, 2017; Wallace, 2016), especially for tourists (Liu et al., 2015). It is important to note that, in this emerging global context favoring the newness and innovativeness, history museums find it difficult to attract young audiences with old and local or national artefacts. As it has been shown consumers' level of cognitive innovativeness affects their attitudes and uses of AR technologies (Huang, Liao, 2015) and assuming that younger audiences have higher levels of new digital technologies acceptance, one could expect social sciences students to appreciate more a local history museum using AR technologies. However, global context asks for global audiences which might not be as interested as residents in local history and local culture. We argue the answer lies in the propensity of local young audiences to accept museums can be modern and innovative and become ambassadors of museums exhibitions, when these local institutions that valorizes the past are willing to adapt to global technologies of the future. There is an important body of empirical studies evidencing the role of residents in attracting tourists as brand ambassadors (Braun et al., 2013). In this regard, Freire (2009) concluded that marketers should acknowledge the role of residents as brand ambassadors, by showing that satisfied residents might become the most valuable ambassadors of their place because they make the difference for tourists when the functional attributes of a destination are similar. On the other hand, there there is also evidence that residents do not automatically become brand ambassadors of a destination for tourists as there can be multiple barriers in accomplishing this role (Rehmet, Dinnie, 2013). Therefore, knowing the factors that predict whether residents will become brand ambassadors of their local culture becomes increasingly important.

1.1. Background

The plot of this project was triggered by the fact that, for the first time in Romania, a local museum (the memorial house of the family who wrote the national anthem) introduced AR technologies as an innovative solution to promote national heritage. The 'Casa Mureșenilor' Museum of Brașov is a memorial house dedicated to the members of the Mureșianu family, well-known Romanian intellectuals. It was founded in 1968, when the descendants of the family donated to the Romanian state the house, the furniture, art objects and an archive of cultural value. The exhibits presenting the life and activity of the Mureșianu family are part of the permanent exhibition of the museum and, in order to promote them, the museum management has introduced AR technology. Even though the house does not seem to be anything more than a mere history museum, with old furniture, paintings with family members and valuable cultural documents, the initial impression changes completely when, from nowhere, Andrei Mureșianu himself appears in front of the visitor. And it's not a simple picture, as we would expect to find in a typical museum. It is his virtual image. The man dressed in clothes of the '80s, welcomes respectful and begins to present his life, gesturing and creating the impression of a real conversation. This simulated image overlaps real images, creating a mixed reality where the visitor can interact with historical personalities. Providing visual and audio sensory inputs was possible using applications installed on a smartphone that allow triggering sensors once the device is turned to the virtual window. The multisensory experience is amplified when the smartphone is attached to the virtual glasses, that isolates the visitor from the real world and transposes him into a new world that allows the virtual elements to penetrate into physical space. This new type of experience allows real-time interaction and makes the visitor more receptive to the presented information. In this museum young people have the possibility to discover historical information directly from Andrei Mureșianu (the writer of the national anthem) and Aurel Mureșianu (the founder of the first Transylvanian newspaper).

They have the opportunity to participate in 100 years old events (`Junii Brașovului`), to learn the society dance `Romana`, created by Iacob Mureșianu in 1850. Besides these discoveries related to the Mureșianu family, the visitors have the opportunity to see the 3D image of Brașov from the beginning of the 20th century, or to see through a virtual window on the ceiling how a Zeppelin flies over the city, just like in 1929. According to the director of the museum, the AR enhanced exhibition "is a step towards the future, under our eyes, as the future is already becoming the present. We offer the visitors the opportunity to immerse into a world of yesteryear. It is an alternative way to visit the same exhibition, so one can see, in the classical way, furniture artefacts, paintings, documents, antiques. At the same time, with this gear VRs, one can also see some other things: characters from other times, movies with Brașov city from the interwar period, ballroom dances, the city seen from above and from below". Similarly, the curator of the exhibition added that the museum stuff "just wanted to diversify the range of heritage presentation solutions in addition to the classical way and come somehow closer to the young generation that uses such devices". Nonetheless, in 2017, Brașov, the city in which we decided to test the potential of AR technology in order to motivate residents to become ambassadors of local culture, became for the first time the leading tourist attraction in Romania, after the capital city, registering a number of 1,246 million visitors.

1.2. Conceptual framework: augmented reality

Scholars do not agree upon a common definition of AR. In his seminal paper, Azuma (1997) identified three defining characteristics of AR: a mixture of real and virtual worlds, interaction in real-time, and 3D integration of real and virtual objects. One of the most cited conceptualisation derives from the Reality–Virtuality continuum (Milgram, Kishino, 1994). This continuum ranges from real to virtual and places mixed reality in the middle as a concoction of real and virtual objects. Inspired by Wu et al. (2013), we applied this conceptual framework, in which mixed reality can take two forms, augmented reality and augmented virtuality, the former referring to an assemblage of the real and the virtual in which the real prevails. Taking into account that, in the museum exhibition analysed in this paper, the technological enhanced experience consisted only in interacting with 7 stimuli (the rest of the surrounding consisting of real objects) and that the enhanced experiences were mainly exposures to mediated forms of movies and pictures taken in the real life (but in another historical period or referring to another historical period), we considered it an AR enhanced visiting experience. Moreover, the fact that in this experimental setting the museum`s guides were assisting the visitors while experiencing the exhibition with AR devices (either phones or gears) and talking to them reduced the chance of producing a virtual experience. We decided to use the concept of AR in its broader sense as it has been argued its restricted definitions would impose technological constrains which could limit the expected positive effects of its implementation (Wu et al., 2013). Although, it has been recently shown that AR can induce intention to revisit museums (Jung et al., 2016), to our knowledge, the studies about its effect on museums` brand images and on propensity to endorse the museums` exhibitions (to become brand ambassadors) are lacking. That is why, the research question raised in this paper is how could an emerging global technology creating an AR medium can be applied to a local museum permanent exhibition promoting national heritage to convert young visitors into brand ambassadors of this visiting experience.

1.3. From traditional marketing to experiential marketing

To answer the research question, first we examined the literature and we identified gaps, based on which we formulated our hypotheses to fill them or to nuance the existed knowledge. Regarding the theoretical literature, in the last decade, scholars have elaborated on the idea that the present landscape is dominated by the experience economy paradigm (Bulearca, Tamarjan,

2010). More recently, the experiential marketing framework has been applied to study the effects of virtual reality and augmented reality on visitor experiences in museums (Jung et al., 2016). This theory moves the accent from the functional and physical qualities of the product to the experience and atmosphere it can produce for consumers. Especially for the tourism domain, the theory states the importance of creating memorable visitors' experiences (Pine, Gilmore, 1999). As for the empirical studies, there is evidence that the customer satisfaction has a direct and significant effect on brand image (Saleem, Raja, 2014). Huang (2014) considered interactivity as an indicator of experiential value AR experience provides for costumers and synthetized this idea through the concept of augmented-reality interactive technology. Also, specific usability problems influence the young audiences experience with AR, especially the clarity of visual perception (Pribeanu, Iordache, 2011). Particularly, there is evidence that, in the museum context, the experience economy is connected with satisfaction about the museum exhibition (Radder, Han, 2015). Moving to a broader context, previous research in the domain of tourism has explored the role of AR in stimulating, for instance, the association between the destination city Dublin and the attribute "innovative" (Han et al, 2014). As it was theorised that interactive technologies have the potential to convince costumers (Fogg, 2003), and to make young audiences to associate the experience as "novel" (Pribeanu, Iordache, 2011), we hypothesized they can convince museums` visitors that the museum is a "modern" and "innovative" one and give them the certitude they will recommend the exhibition in the future. Drawing upon the finding that AR can increase costumer satisfaction through the production of perceived experiential value (Chou, 2009; Yuan, Wu, 2008) we conjectured that, after visiting an AR enhanced exhibition, the museums visitors would rate particular experiential features (interactivity and multisensory) depending on overall degree of satisfaction about the AR enhanced exhibition. Hence, we formulated 6 hypotheses:

- H1: The satisfaction about the augmented museum exhibition (SAE) predicts the perceived brand image of the museum (BIM); in other words, the tendency to associate a museum using AR technologies with the attributes modern and innovative depends upon how satisfactory the AR exhibition is perceived to be
- H2: The satisfaction about the augmented museum exhibition (SAE) predicts the intention to become a brand ambassador for the AR enhanced exhibition (BAE); in other words, the tendency to recommend an AR museum exhibition depends upon how satisfactory the AR enhanced exhibition is perceived to be.
- H3: The perceived brand image of the museum (BIM) predicts the intention to become a brand ambassador for the AR enhanced exhibition (BAE);
- H4: The influence of the satisfaction about the museum exhibition on perceived brand image of the museum (BIM) is mediated by the perception of multisensory AR experience (MAR) and interactive AR experience (IAR)
- H5: The influence of the satisfaction about the augmented museum exhibition (SAE) on the intention to become a brand ambassador for the AR enhanced exhibition (BAE) is mediated by the perception of multisensory AR experience (MAR) and interactive AR experience (IAR).
- H6: The influence of the perceived brand image of the museum (BIM) on the intention to become a brand ambassador for the AR enhanced exhibition (BAE) is mediated by the perceived influence of AR technology on satisfaction about the AR enhanced exhibition (SCT).

2. METHODS
We conducted a cross-sectional exploratory quantitative study to assess the educational effects of museum communication with young audiences after they experienced the exhibition with AR technologies.

Primary data were collected in October 2017 by applying a survey based on a standardized questionnaire to pupils and students immediately after they visited the permanent museum exhibition using AR technologies. The questionnaire was auto-administered with the help of research stuff and took 15 minute to complete. We pre-tested the questionnaire on 25 pupils and students, and rephrased some items identified as too difficult to follow. The AR museum exhibition was an experimental project carried out between August and November 2017 with a limited number of beneficiaries. So, to assess its effects we used a purposeful sample of 400 museum visitors participating in the project from Brașov city, Romania (200 pupils and 200 students; M = 17 years old; SD = 3 years).

2.1. Measurements
All of the variables included in the models tested in this paper were measured on a 5 point Likert scale.

2.1.1. The Brand Image of the Museum (BIM)
The Brand Image of the Museum was measured using the following question: "To what degree do you agree or not that, after visiting the exhibition, you reached the following conclusion: It proved to me that a local museum can be modern and innovative". The answers were ordered on a 5-point Likert scale (where 5 means "strongly agree", and 1, "strongly disagree").

2.1.2. The intention to become a Brand Ambassador of the Exhibition of the museum (BAE)
The intention to become a Brand Ambassador of the Exhibition of the museum was measured using the following question: "To what degree do you agree or not that, after visiting the exhibition, you reached the following conclusion: I am sure I would recommend this exhibition to the others". The answers were ordered on a 5-point Likert scale (where 5 means "strongly agree", and 1, "strongly disagree").

2.1.3. The Satisfaction about the Augmented Exhibition of the museum (SAE)
The Satisfaction about the Augmented Exhibition of the museum was measured using the following question: "What is your first impression about the exhibition now after visiting it", the answers being ordered on a 5-point Likert scale (where 5 means "I liked it very much", and 1, "I did not liked it al all"). The answers were ordered on a 5-point Likert scale (where 5 means "strongly agree", and 1, "strongly disagree").

2.1.4. The Multisensory AR experience (MAR)
The Multisensory AR experience was measured using the following question: "Our exhibition offers a series of experiences created with the help of AR and VR technologies. We would like to know how did you perceived them (...) It stimulated many of my senses simultaneously" (where 5 means "strongly agree", and 1, "strongly disagree").

2.1.5. The Interactive AR experience (IAR)
The Interactive AR experience was measured using the following question: "Our exhibition offers a series of experiences created with the help of AR and VR technologies. We would like to know how did you perceived them (...) such an interactive experience is catching—it picks you up" (where 5 means "strongly agree", and 1, "strongly disagree").

2.1.6. The Contribution of AR Technology on Satisfaction about the exhibition (SCT)
The Contribution of AR Technology on Satisfaction about the exhibition was measured using the following question: "To what degree do you appreciate that the usage of modern technologies has contributed to your general impression about the exhibition", the answers

being ordered on a 5 point Likert scale (where 5 means "it contributed very much", and 1, "it did not contributed al all").

2.2. Statistical Analysis

We analyzed the data using IBM SPSS Statistics (version 21). To test the hypotheses, we conducted multiple linear regressions analyses. For estimating direct and indirect effects in multiple mediator models, we followed Hayes` (2013) recommendations and used PROCESS Macro v2.16 add-on for SPSS (an OLS regression path analysis modelling tool) to test three serial multiple mediator models with one and two mediators.

3. RESULTS

Most of the respondents strongly agreed that they liked the exhibition, that it convinced them a local museum can be modern and innovative, and that they would recommend the exhibition to others. Conversely, the highest strong disagreement was reported for the perception that the AR exhibition managed to simultaneously stimulate multiple senses.

Table 1: Descriptive statistics of all the variables included in the models

Variable	Relative Frequency (%)					Mean	Standard Deviation	Valid Cases
	1 Strongly disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly agree	M	SD	N
BAE	1.6	4.7	12.3	22.7	58.7	4.3	1.0	383
BIM	2.0	3.3	7.3	21.1	66.4	4.5	0.9	399
SAE	0.0	1.3	9.7	28.8	60.3	4.5	0.7	393
MAR	6.0	12.6	22.9	28.7	29.7	3.6	1.2	397
IAR	1.5	3.5	11.4	23.3	60.3	4.4	0.9	395
SCT	1.8	2.9	10.6	26.8	57.9	4.4	0.9	385

3.1. Mediation models

We tested two multiple mediation models, one for every effect: BIM (Model 1) and BAE (Model 2); and one simple mediation model by regressing the effect from the first model on the effect of the second model (Model 3). In the end, we united the three models into an Integrative Model.

3.1.1. Model 1

Regressing SAE, MAR and IAR on BIM gives the most accurate prediction. For the stimulating AR path (SAE -> MAR -> IAR-> BIM) the strongest predictor is SAE (for MAR); for the multisensory AR path (SAE -> MAR -> BIM) the strongest predictor is SAE (for MAR); for the interactive AR path (SAE -> IAR -> BIM) the strongest predictor is IAR (for BIM).

Table following on the next page

Table 2: Regression Coefficients, Standard Errors, and Model Summary Information for the hypothesised influence of Satisfaction about the Augmented Exhibition on the perceived Brand Image of the Museum in a serial multiple mediation model

DV	M_1(MAR)				M_2(IAR)				Y(BIM)			
IV		Coeff.	SE	p		Coeff.	SE	p		Coeff.	SE	p
X(SAE)	a_1	.692	.076	.000	a_2	.289	.062	.000	c'	.135	.058	.021
M_1(MAR)	-	-	-	-	d_{21}	.295	.037	.000	b_1	.162	.037	.000
M_2(IAR)	-	-	-	-	-	-	-	-	b_2	.415	.047	.000
Constant	i_{M_1}	.536	.344	.121	i_{M_2}	2.001	.254	.000	i_Y	1.448	.252	.000
	$R^2 = .178$				$R^2 = .268$				$R^2 = .370$			
	$F (1, 383) = 83.149$ $p = .000$				$F (2, 382) = 69.987$ $p = .000$				$F (3, 381) = 74.511$ $p = .000$			

Note: Model 1 confirms the first and the fourth hypothesis

The direct effects of Satisfaction about the Augmented Exhibition on the perceived Brand Image of the Museum are smaller than indirect effects, and among the indirect effects, the interactive AR path accounts for the strongest impact.

Table 3: Decomposing the total effects of Satisfaction about the Augmented Exhibition on perceived Brand Image of the Museum

Type o effect	Path	Effect
Total effects	SAE -> BIM	.452
Direct effect	SAE -> BIM	.135
Total Indirect effects	SAE -> BIM	.317
Indirect effect of the multisensory AR path	SAE -> MAR -> BIM	.112
Indirect effect of the stimulating AR path	SAE -> MAR -> IAR -> BIM	.085
Indirect effect of the interactive AR path	**SAE -> IAR -> BIM**	.120

3.1.2. Model 2
Regressing BAE on SAE, MAR and IAR gives the most accurate prediction. For the stimulating AR path (SAE -> MAR -> IAR-> BAE) the strongest predictor is SAE (for MAR); for the multisensory AR path (SAE -> MAR -> BAE) the strongest predictor is SAE (for MAR); for the interactive AR path (SAE -> IAR -> BAE) the strongest predictor is SAE (for IAR).

Table 4: Regression Coefficients, Standard Errors, and Model Summary Information for the hypothesised influence of Satisfaction about the Augmented Exhibition on the intention to become a Brand Ambassador for the Exhibition in a serial multiple mediation model

DV	M_1(MAR)				M_2(IAR)				Y(BAE)			
IV		Coeff.	SE	p		Coeff.	SE	p		Coeff.	SE	p
X(SAV)	a_1	.689	.077	.000	a_2	.303	.063	.000	c'	.280	.065	.000
M_1(MAR)	-	-	-	-	d_{21}	.280	.039	.000	b_1	.204	.042	.000
M_2(IAR)	-	-	-	-	-	-	-	-	b_2	.263	.053	.000
Constant	i_{M_1}	.569	.348	.102	i_{M_2}	2.009	.258	.000	i_Y	1.178	.282	.000
	$R^2 = .180$				$R^2 = .260$				$R^2 = .314$			
	$F (1, 368) = 80.559$ $p = .000$				$F (2, 367) = 64.396$ $p = .000$				$F (3, 366) = 55.763$ $p = .000$			

Note: Model 2 confirms the second and the fifth hypothesis

The direct effects of Satisfaction about the Augmented Exhibition on the intention to become a Brand Ambassador for the Exhibition are higher than indirect effects (although the difference is very small), and among the indirect effects, the multisensory AR path accounts for the strongest impact.

Table 5: Decomposing the total effects of Satisfaction about the Augmented Exhibition on the intention to become a Brand Ambassador for the Exhibition

Type o effect	Path	Effect
Total effects	SAE -> BAE	.551
Direct effect	SAE -> BAE	.280
Total Indirect effects	SAE -> BAE	.271
Indirect effect of the multisensory path	**SAE -> MAR -> BAE**	.141
Indirect effect of the stimulating path	SAE -> MAR -> IAR -> BAE	.051
Indirect effect of the interactive path	SAE -> IAR -> BAE	.080

3.1.3. Model 3

The regression table shows that regressing BAE on BIM and STC gives the most accurate prediction.

Table 6: Regression Coefficients, Standard Errors, and Model Summary Information for the hypothesised influence of perceived Brand Image of the Museum on the intention to become a Brand Ambassador for the Exhibition in a simple mediation model

DV	M_1(SCT)				Y(BAE)			
IV		Coeff.	SE	p		Coeff.	SE	p
X(BIM)	a_1	.392	.048	.000	c'	.416	.051	.000
M_1(SCT)	-	-	-	-	b_1	.208	.051	.001
Constant	i_{M_1}	2.610	.220	.000	i_Y	1.562	.253	.000
	$R^2 = .153$				$R^2 = .261$			
	F (1, 365) = 65.932, p = .000				F (2, 364) = 64.301, p = .000			

Note: Model 3 confirms the third and the sixth hypothesis

The regression table shows that regressing BAE on BIM and STC gives the most accurate prediction, and for this adjacent path, the strongest predictor is BIM for BAE.

Table 7: Decomposing the total effects of perceived Brand Image of the Museum on the intention to become a Brand Ambassador for the Exhibition

Type o effect	Path	Effect
Total effects	BIM -> BAE	.498
Direct effect	**BIM -> BAE**	.416
Total Indirect effects of the perceived technology`s influence path	BIM -> SCT -> BAE	.082

The direct effects of perceived Brand Image of the Museum on the intention to become a Brand Ambassador for the Exhibition are much higher than indirect effects through the perceived technology`s influence path.

4. CONCLUSION

First, we confirmed the hypothesis that satisfaction about the exhibition has direct effects on both brand image of the museum and on intention to become a brand ambassador for the

exhibition. Second, we evidenced that the strongest indirect path from satisfaction about the exhibition to brand image of the museum goes through the perceived interactivity of the AR experience of the exhibition. Third, we found that the strongest indirect path from the satisfaction about the augmented exhibition to the intention to become a brand ambassador for the exhibition goes through the perceived multisensory experience of AR. Nonetheless, we confirmed the brand image of the museum has direct effects on the intention to become a brand ambassador for the exhibition. In this case, the mediating effect of the perceived influence of technology on the satisfaction about the exhibition is very small. The main contribution of this paper is to show that, in the context of AR experience of museums exhibitions, the influence of satisfaction on brand image and on intention to become a brand ambassador hide an intervening mechanism involving multisensory and interactive experience. Therefore, we can predict that by enhancing the perceived interactivity of a museum exhibition experienced through AR we could increase the degree of perceiving the museum as modern and innovative which could lead to recommending the exhibition to others. Likewise, we can predict that by enhancing the perceived multisensory character of a museum exhibition experienced through AR we could increase the certainty of present visitors about recommending the exhibition to others in the future. Another noteworthy result is that this intervening mechanism can be a more complex one (even if the indirect effects are smaller than the ones presented above), involving both perceived interactivity and multisensory character of the AR experience, on condition that the multisensory triggers the interactivity (at the perception level of the experience).

LITERATURE:
1. Azuma, R. T. (1997). A survey of augmented reality. *Presence - Teleoperators and Virtual Environments,* 6(4), 355–385.
2. Barry, A., Thomas, G., Debenham, P. and Trout, J. (2012). Augmented reality in a public space: The natural history museum, London. *Computer*, 45(7), 42-47.
3. Belenioti, Z. C. and Vassiliadis, C. A. (2017). Branding in the new museum era. In A. Kavoura, D., Sakas and P., Tomaras (Eds.), *Strategic Innovative Marketing* (pp. 115-121). Cham: Springer.
4. Braun, E., Kavaratzis, M. and Zenker, S. (2013). My city–my brand: the different roles of residents in place branding. *Journal of Place Management and Development*, 6(1), 18-28.
5. Bulearca, M. and Tamarjan, D. (2010). Augmented reality: A sustainable marketing tool. *Global business and management research: An international journal*, 2(2), 237-252.
6. Chang, K. E., Chang, C. T., Hou, H. T., Sung, Y. T., Chao, H. L. and Lee, C. M. (2014). Development and behavioral pattern analysis of a mobile guide system with augmented reality for painting appreciation instruction in an art museum. *Computers & Education*, 71, 185-197.
7. Chou, H. J. (2009). The effect of experiential and relationship marketing on customer value: A case study of international American casual dining chains in Taiwan, *Social Behaviour and Personality*, 37(7), 993-1008
8. Fogg, B. J. (2003). *Persuasive technology: Using computers to change what we think and do*. San Francisco, CA: Kaufmann Publishers.
9. Freire, J. R. (2009). 'Local People'a critical dimension for place brands. *Journal of Brand Management,* 16(7), 420-438.
10. Han, D., Jung, T. and Gibson, A. (2014). Dublin AR: Implementing Augmented Reality (AR) in Tourism, In: Z. Xiang and I. Tussyadiah, (Eds.), *Information and Communication Technologies in Tourism (*pp. 511-523). Wien, New York: Springer International Publishing.

11. Hassan, A. and Rahimi, R. (2016). Consuming "Innovation" in Tourism: Augmented Reality as an Innovation. In: N. Pappas and I. Bregoli (Eds.), *Global dynamics in travel, tourism, and hospitality* (pp. 130-147). Hershey, PA: IGI Global.
12. Hayes, A. F. (2005). *Statistical methods for communication science*. Mahwah: Routledge.
13. Huang, T. L. and Liao, S. (2015). A model of acceptance of augmented-reality interactive technology: the moderating role of cognitive innovativeness. *Electronic Commerce Research*, 15(2), 269-295.
14. Jung, T., tom Dieck, M. C., Lee, H. and Chung, N. (2016). Effects of virtual reality and augmented reality on visitor experiences in museum. In *Information and Communication Technologies in Tourism* (pp. 621-635). Cham: Springer.
15. Leue, M. C., Jung, T. and tom Dieck, D. (2015). Google glass augmented reality: Generic learning outcomes for art galleries. *In Information and Communication Technologies in Tourism* (pp. 463-476). Cham: Springer.
16. Liu, C. R., Liu, H. K. and Lin, W. R. (2015). Constructing customer-based museums brand equity model: The mediating role of brand value. *International Journal of Tourism Research*, 17(3), 229-238.
17. Milgram, P. and Kishino, F. (1994). A taxonomy of mixed reality visual displays. *IEICE TRANSACTIONS on Information and Systems*, 77(12), 1321-1329.
18. Pine, B. J. and Gilmore, J. H. (1999). *The experience economy: Work is theatre & every business a stage.* Boston: Harvard Business School Press.
19. Pribeanu, C. and Iordache, D. D. (2011). Usability of an Augmented Reality Learning Scenario: A Mixed Methods Evaluation Approach. *Annals of the Academy of Romanian Scientists*, 4(1), 79-90.
20. Radder, L. and Han, X. (2015). An examination of the museum experience based on Pine and Gilmore's experience economy realms. *Journal of Applied Business Research*, 31(2), 455-470.
21. Squire, K. (2010). From information to experience: Place-based augmented reality games as a model for learning in a globally networked society. *Teachers College Record*, 112(10), 2565-2602.
22. Wallace, M. (2016). *Museum branding: how to create and maintain image, loyalty, and support* (2nd edition). London: Rowman & Littlefield.
23. Wu, H. K., Lee, S. W. Y., Chang, H. Y. and Liang, J. C. (2013). Current status, opportunities and challenges of augmented reality in education. *Computers & Education*, 62, 41-49.
24. Yoon, S. A. and Wang, J. (2014). Making the invisible visible in science museums through augmented reality devices. *TechTrends*, 58(1), 49-55.
25. Yuan, Y. H. E. and Wu, C. K. (2008). Relationships among experiential marketing, experiential value, and customer satisfaction. *Journal of Hospitality & Tourism Research*, 32(3), 387-410.

GENDER EQUALITY IN MONTENEGRO THROUGH THE PRISM OF REGIONAL REPRESENTATION

Ana Lalevic-Filipovic
University of Montenegro, Faculty of Economics
Jovana Tomaševića 37, 81000 Podgorica, Montenegro
savana@t-com.me

Andelko Lojpur
University of Montenegro, Faculty of Economics
Jovana Tomaševića 37, 81000 Podgorica, Montenegro
andjelko@ac.me

ABSTRACT
Global business trends, internationalization of the economy, as well as the transition path through which many countries of Central and Eastern Europe have passed have caused numerous socio-economic, cultural and sociological changes. In the still patriarchal Montenegro, direct activism of women and the increase in their social power is seen as a process that runs quite slowly. Without the consistent participation of women in Montenegro in the system of state and local government, the possibilities for the adequate implementation of their rights, which are contained in both international and national legislation, are small. In managing these, but also relying on the traditional stereotypes in Montenegro, we wanted to see through the prism of the accounting profession, through the survey research whether regional affiliation has a statistically significant influence on the perception of respondents regarding the participation of women in social life. We consider that the issues discussed above are more interactive and more current, taking into account the circumstances of Montenegro's aspiration for joining the European Union, as well as the implementation of certain legislative and institutional regulations that must be met in the area of achieving gender equality.
Keywords: *accounting profession, women, EU, Montenegro, traditional, modern business conditions*

1. INTRODUCTION

The conditions of business in which an individual performs his activity in recent decades suffers a number of changes, setting stricter criteria and requirements in terms of employment, professionalism, destroying former very strong employment stereotypes, searching for highly qualified professionals who are willing and able to learn. It was precisely that stated that on the surface, they began to sail off the personal qualities of women who, thanks in the first place of dedication to work, prudence, analytics, rationality in judging, detail in the preparation of plans and realization of plans, succeeded (to some extent) which just require such qualities. Through the prism of productive, reproductive and public work, today's modern woman is showing her qualities and strives to position her precisely in the place that belongs to her. However, the path of demolition of traditional stereotypes is very difficult, since in the less developed societies the division between "male" and "women" jobs is more clearly expressed, and that men are more qualified for socially more important and economically more productive jobs that are much more paid. It was also the initial motivation that the authors of the work decided to do research on this subject. As a candidate for EU membership, Montenegro has to create numerous capacities in order to readily join the European Community. One of the conditions for the modernization of Montenegrin society is gender equality, that is, the adequate participation of women in certain social and democratic flows. Notwithstanding the above, Montenegro is recognized as a country characterized by a female paradox, fueled by traditional

prejudice, that it is the duty of the woman to take care of children and the family, which leads to the gap in the reconciliation of private and family life. Through this research, we wanted to identify obstacles that prevent women from entering the public life area, or to identify the features that a woman chooses to find more space in. The aim of this paper is to indicate whether regional affiliation has an impact on perceptions of respondents regarding women's participation in operational and strategic positions. For the group of respondents, members of the accounting profession were taken as one of the most important for the creation of the economic and economic environment of Montenegro. The paper seeks to prove the following hypothesis:

H: Reonal affiliation (north, south and central part) has a significant influence on the perception of the position of women in Montenegro in certain positions (operational / strategic).

The work is structured in four parts. After the introductory part, a literature review is followed. The second part of the work includes the analysis of the ambience in Montenegro regarding the place and role of women - sometimes and now. The third part of the paper presents the methodology and description of the data used for empirical analysis, as well as gives the results of the conducted survey research. The last part of the work, before conclusions and discussion, shows the empirical results of the model. The fact that similar or the same research on this topic has not been done so far in Montenegro, nor is it much wider than the originality of research, but at the same time they give support to talk about these or similar topics in the future.

2. REVIEW OF LITERATURE

Unfortunately, by analyzing the available literature, we have not been able to find a representative basis that would serve as a guide for the realization of the initiated research. However, by inspecting existing research, we notice that they mainly deal with the problem of women's representation in intelligent management structures[1]. However, even without a substantial background in the literature, we consider that the topic is very inter-active for the further course of the research, especially taking into account the facts that will be discussed in part 2. What we want to point out, and relies on research work (Humphrey, at. All, 2013) is that in the mid-1950s, women's involvement in the workplace accounted for only 30%, while in the 1970s and 1990s, In the early 19th century, it increased to 40% and 45% respectively. Professions such as veterinary medicine (Lincoln, 2010), and accounting/auditing (Flynn, Leeth, & Levy, 1996) have recently become "feminized"— that is to say, a majority of professionals in the field are now women.

3. THE PLACE AND ROLE OF WOMEN IN MONTENEGRO - SOMETIMES AND NOW

Women in Montenegro make up more than half of the population (50.6%) and predominate compared to men in terms of study completion (60.5% versus 39.5%). However, this initial input is no longer a reflection of the greater participation of women in public and social life, that is, leadership positions in state institutions as well as in the private sector[2]. In that part, it is a karateristic example that women dominate in the educational system of Montenegro (75.3 %), are in the absolute minority in the decision-making positions, except in the case of pre-

---

[1]https://www2.deloitte.com/content/dam/Deloitte/global/Documents/Risk/Women%20in%20the%20boardroom%20a%20global%20perspective%20fifth%20edition.pdf, 15.03.2018.;
https://files.eric.ed.gov/fulltext/EJ944212.pdf, 15.03.2018.

[2] http://portalanalitika.me/clanak/226006/zene-i-zakonodavna-vlast-u-crnoj-gori-vise-od-ispunjavanja-kvota (11.02.2018)

school education[3]. On the other hand, it is interesting to note that in the position of judges, as well as in the prosecution, more women are represented in the total (observed across all municipalities). When considering a judge according to the type of court, there is a noticeable dominance of the female population in a number of municipalities (with the exception of the Municipalities of Kotor, Niksic, Plav, Rozaje, Ulcinj and Zabljak), while the position of prosecutors in almost all municipalities (except ODT Ulcinj and ODT Rozaje) are covered by female females. However, such an approximate situation is not in the part of the executive power, where until now the position of the prime minister and the president of the state of Montenegro has not been left to women. In the current structure of executive power, all prime ministerial posts belong to men, while the ministerial position is entrusted to four women. By looking at the available data at the local level (23 municipalities)[4] on the gender composition of the representatives of local authorities, it is noted that in the highest positions there is very little women's participation - only in three municipalities the share of women in local legislative power hardly exceeds 30% (2015). A similar situation is with the governing structure where the position of the president, that is, the vice-president of the municipality and the speaker of the parliamentary assembly is predominantly left to men. On the basis of everything exposed, it is evident that patriarchal stereotypes regarding women are still not completely eradicated in Montenegro. A traditional Montenegrin has always been somewhere hidden in the background to help, and nobody bothered. Even today, in some parts of Montenegro, we can meet such Montenegrin people. Although the woman remains above all her mother and wife, today the woman in Montenegro is trying to adapt to the new circumstances, trying to establish the most favorable balance between professional and private engagement. Often the inability to have understanding in terms of creating a better family and professional status, that is, the inability to, first of all, personal choices with a traditional understanding of their role, rarely appear as the main mechanisms of her professional advancement. However, contemporary trends in life and business have greatly contributed to the change in this traditionalist view of the position of women. The woman in Montenegro becomes more independent, self-confident, trying to break traditional and dominant prejudices on the issue of "male-female" jobs. In fact, it is not a rare case today in Montenegro to meet women who have begun to ask for enough space to express their abilities and qualities, and who have had the courage to break traditional stereotypes that have long ruled in the business environment. Persistence, analytics, responsibility, intuitive decision-making, patience, cautiousness are just some of the features that have contributed to building their own style of behavior and something for which women have become recognizable in the business world. Women today are very successful in demonstrating how capable and ready to engage in the fight on a tadicional "masculine ground".

4. THE STARTING POINT OF RESEARCH AND HYPOTHESIS

The focus of this research is to examine the opinion from the regional positioning of members of the accounting community of women's participation in certain positions, and accordingly determine whether women with their personally-inborn qualities, the existing (traditional) model of behavior and "imposed" obligations are more predetermined They are dealing with operational but less executive jobs. The research used the primary data source. A data collection strategy is a structured Web Survey - distributed electronically. The distribution of the survey was supported by the Professional Accounting Association of Montenegro (ICAM). The survey was sent to 184 electronic addresses - accountants and auditors of members of the listed professional accountant in Montenegro.

---

[3] Downloaded from „Informacija o učešću žena u zakonodavnoj, izvršnoj i sudskoj vlasti u Crnoj Gori Podgorica" jul, 20015. Ministarstvo za ljudska i manjinska prava, pp. 7
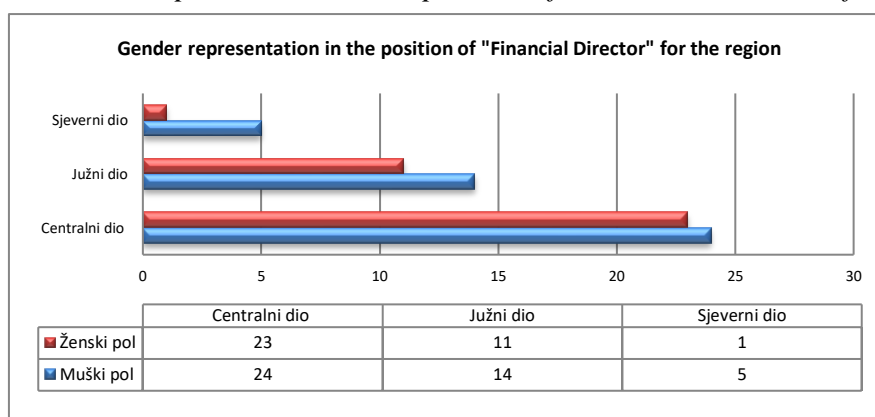[4] Same, 7

The reasons why the accounting community was selected for the research group are multiple. One of them is in the circumstances that the accounting profession is primarily responsible for shaping the business environment of the economy of one country, through the information it provides to the interested balance addressees. The second reason lies in the fact that the accounting profession in Montenegro is a general women's profession, as evidenced by the research carried out so far, and from the women's point of view, and in this context, we were interested in whether the regional positioning produces a certain influence on the accounting profession. A web survey was available for two weeks, starting April 15 of the current year. This period was chosen because it is about the completion of an extremely dynamic period during the year, when financial statements are submitted to the regulators, as well as due to the circumstances. 78 respondents responded to the questionnaire, which makes a total response of 43%. We think that the size of this sample is sufficient to carry out the research. Data entry was done automatically via Google Forms, while the processing of data with the required logical controls was done in IBM SPSS Software. Taking into account the applied methodology and the fact that the analysis included members of the professional accountancy association in Montenegro, who for the needs of this research were selected as a representative group, we think that the results of the research can be treated as valid indicators for analysis. In the analysis of the results of the empirical research are the use of statistical techniques that are compatible with the nature of the data collected, the method of measurement and the nature of the variable and set objectives of the research. Accordingly, the procedure was as follows: a) for each variable determined the percentage of data missing; b) cross-tabulation (Crosstabs) is made between the variable; c) Hi-square Independence Test (Pearsons Chi-Square) was performed to determine the relationship between the observed variables; and finally, d) Kramer's V (Cramer's V) was designed with the intent to estimate the degree of interconnectedness of the variables.

5. RESULTS
5.1. Profile of respondents
When it comes to gender in the company, we notice that women are dominated by women (82.1%) compared to male population (17.9%). In other words, more than two-thirds of the respondents in the sample are women, which makes their perception from the aspect of making certain conclusions about the issues that are more relevant in the focus of this research. Therefore, the answers to the questions asked can be used for the given analysis. More than half of the respondents work in a company positioned in the central part of Montenegro (60.3%), while the rest is located in the south (32.1%), or in the northern part (7.7%). The highest number of respondents came from trade activities (24.4%), while respondents from tourism and catering industry (16.7%), that is production (12.8%) and construction (11.5 %), while the smallest number of respondents are employed in financial institutions. From the perspective of the position they occupy, we note that the majority of respondents are in the position of chief accountant (48.7%), while a significantly smaller number covers the position of financial director (16.7%) or bookkeeper (12.8%) and internal auditor (10.3%). In the companies covered by the analysis, the position of the general manager is dominated by the men of the male sex (76.9%), but also the position of the financial director, which substantially confirms the views expressed in the introductory part of the paper on gender equality in Montenegro. A more detailed representation of the gender participation in the specified position is given on Fig.1 and Fig.2.

Figure following on the next page

Figure 1: Gender representation in the position of "Director General" for the region

	Centralni dio	Južni dio	Sjeverni dio
Ženski pol	9	8	1
Muški pol	38	17	5
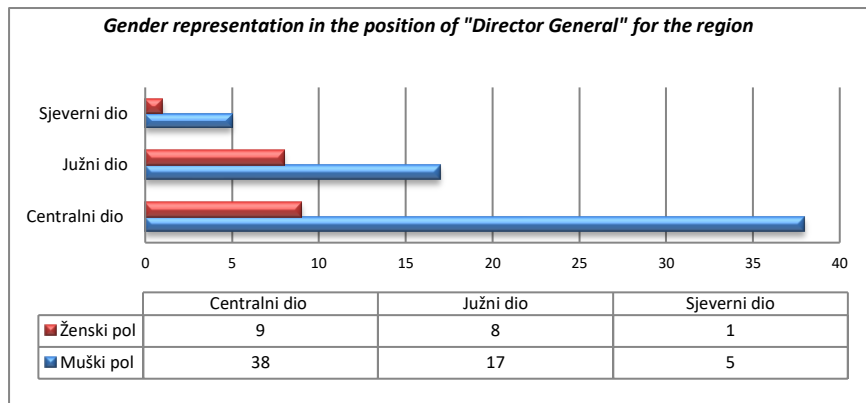
Figure 2: Gender representation in the position of "Financial Director" for the region

	Centralni dio	Južni dio	Sjeverni dio
Ženski pol	23	11	1
Muški pol	24	14	5

On the other hand, the post of head of accounting is covered more by female females (87.2%), which again suggests that operational activities are more immanent to women than men.

6. RESULTS OF THE CONDUCTED RESEARCH - PERCEPTION OF THE RESPONDENTS REGARDING THE POSITION OF WOMEN ON CERTAIN STRATEGIC AND / OR OPERATIONAL ACTIVITIES?

In the continuation of the research, the question of the perception of the respondents in terms of gender selection in the performance of the post of head of accounting was addressed. Asked whether the company's head of accounting was to be performed by a person of a male or female feminine, 53.8% of respondents answered that this should be the person of the male sex, and the rest 46.2%, however, that this work should be entrusted to the person of the female sex. By analyzing the structure of the answers received, from the aspect of belonging to a certain region, we come to a match in the opinion of the respondents who come from the north and from the central part, while the respondents from the southern part of the opinion that this work should be performed by a person of the female sex.

Figure following on the next page

Figure 3

			Pitanje 12: Poziciji izvršnog direktora u preduzeću treba da obavlja:		Total
			Muški pol	Ženski pol	
Pitanje 2: Sjedište kompanije je (prema regionu u Crnoj Gori):	Centar	Count	27	20	47
		% within Pitanje 2: Sjedište kompanije je (prema regionu u Crnoj Gori):	57.4%	42.6%	100.0%
	Jug	Count	11	14	25
		% within Pitanje 2: Sjedište kompanije je (prema regionu u Crnoj Gori):	44.0%	56.0%	100.0%
		% within Pitanje 12: Poziciji izvršnog direktora u preduzeću treba da obavlja:	26.2%	38.9%	32.1%
	Sjever	Count	4	2	6
		% within Pitanje 2: Sjedište kompanije je (prema regionu u Crnoj Gori):	66.7%	33.3%	100.0%
		% within Pitanje 12: Poziciji izvršnog direktora u preduzeću treba da obavlja:	9.5%	5.6%	7.7%
Total		Count	42	36	78
		% within Pitanje 2: Sjedište kompanije je (prema regionu u Crnoj Gori):	53.8%	46.2%	100.0%
		% within Pitanje 12: Poziciji izvršnog direktora u preduzeću treba da obavlja:	100.0%	100.0%	100.0%

Figure 4

			Pitanje 15: Poziciju šefa računovodstva u preduzeću treba da obavlja:		Total
			Muški pol	Ženski pol	
Pitanje 2: Sjedište kompanije je (prema regionu u Crnoj Gori):	Centar	Count	6	41	47
		% within Pitanje 2: Sjedište kompanije je (prema regionu u Crnoj Gori):	12.8%	87.2%	100.0%
		% within Pitanje 15: Poziciju šefa računovodstva u preduzeću treba da obavlja:	54.5%	61.2%	60.3%
	Jug	Count	3	22	25
		% within Pitanje 2: Sjedište kompanije je (prema regionu u Crnoj Gori):	12.0%	88.0%	100.0%
		% within Pitanje 15: Poziciju šefa računovodstva u preduzeću treba da obavlja:	27.3%	32.8%	32.1%
	Sjever	Count	2	4	6
		% within Pitanje 2: Sjedište kompanije je (prema regionu u Crnoj Gori):	33.3%	66.7%	100.0%
		% within Pitanje 15: Poziciju šefa računovodstva u preduzeću treba da obavlja:	18.2%	6.0%	7.7%
Total		Count	11	67	78
		% within Pitanje 2: Sjedište kompanije je (prema regionu u Crnoj Gori):	14.1%	85.9%	100.0%
		% within Pitanje 15: Poziciju šefa računovodstva u preduzeću treba da obavlja:	100.0%	100.0%	100.0%

As the number of respondents from the central part of Montenegro was the most frequent, he noticed that the mentioned circumstance could represent a limitation that could affect the results that we have come to. Hence, the Chi-Square Tests examined the impact of regional affiliation on the opinion of the respondents about the position of the sexes in certain positions.

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	1,992[a]	2	.369
Likelihood Ratio	1.580	2	.454
N of Valid Cases	78		

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	1,617[a]	2	.445
Likelihood Ratio	1.625	2	.444
N of Valid Cases	78		

The results of the Hi squared test should show whether there is statistically significant difference at the level p <0.05 among the presented groups of subjects in the sample after perception of the position of the sexes. In order for the result to be significant asymptotic significance it should be 0.05 or less. In this example, this value is greater than the alpha value

227

of 0.05, so we conclude that our result is not statistically significant. This means that the opinion of respondents belonging to certain regions in Montenegro on the issue of (sub) gender representation does not statistically significantly differ. Although Chi-Square Tests showed that the result was not statistically significant, however, we wanted to carry out a subsequent dough through Cramer's V indicators, in order to determine the impact of the region on the perception of respondents.

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.160	.369
	Cramer's V	.160	.369
N of Valid Cases		78	

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.144	.445
	Cramer's V	.144	.445
N of Valid Cases		78	

Starting from the above, the coefficientV is 0.160, that is, 0.144, which is considered to be a minor influence according to Kramer's criterion. In other words, there is a link between the membership of the respondent region and the positioning of lead in a particular position, but this link is insignificant, especially in the respondent's opinion on who should be assigned the position of "head of accounting". The fact that women in Montenegro make more than half of the population, in itself, speaks about the importance of their greater total activism in public and political life, and that they represent an extremely important factor in the democratization of a society. However, the fact is that women in Montenegro are characterized by underrepresentation in the process of making political and public decisions, and according to the above, we were interested in the opinion of the respondents on the reasons that they state. Regardless of their belonging to a particular region, the respondents were unanimous in their view that the family obligations (39%), stress (24%), patriarchal stereotypes and lack of ambitions (14% and 12%) represent the limiting factors of gender balanced representation. Looking at the answers received from the corners of a particular region, we note that respondents from the central and northern parts of Montenegro, as the dominant limiting factor, listed family obligations and stress (42.6% and 33.3% respectively), while respondents from the southern part point out tradition and family obligations (24%) as dominant. According to this segment of analysis we can say that Montenegro is still a traditional environment in the division of jobs between men and women. The woman is still the primary concern of the family, and because of the traditional circumstances and family obligations, there is basically no time to contribute to the greater participation of women in public affairs.

7. CONCLUSION
The issue of full division of jobs in the last few decades occupies both the professional and the scientific public. This issue is particularly inter-active in countries that traditionally have the status of "patriarchal". Back in the last ten years, research in Montenegro has been cited by the accounting community with the intention of examining the students' participation and reasons for (un) participating women in the executive branch. As the research was carried out twice in different periods of time, it came to the conclusion that no more has changed much in the

perception of respondents on this issue. Through this research, we wanted, regardless of what was previously said, to determine whether the regional positioning of the respondents had an impact on the perception of women / men. The results of the study showed that there is no statistically significant influence, which can be attributed to the circumstance that respondents, regardless of the region, perceive the subject matter in the same way.

LITERATURE:
1. https://www2.deloitte.com/content/dam/Deloitte/global/Documents/Risk/Women%20in%20the%20boardroom%20a%20global%20perspective%20fifth%20edition.pdf, 15.03.2018.; https://files.eric.ed.gov/fulltext/EJ944212.pdf, 15.03.2018.
   [1] http://portalanalitika.me/clanak/226006/zene-i-zakonodavna-vlast-u-crnoj-gori-vise-od-ispunjavanja-kvota (11.02.2018)
2. Informacija o učešću žena u zakonodavnoj, izvršnoj i sudskoj vlasti u Crnoj Gori Podgorica" jul, 20015. Ministarstvo za ljudska i manjinska prava
3. Humphrey, at. all, An investigation of wages as gender shifts in the accounting profession, International Journal of Business, Accounting, and Finance , Volume 7, Number 1, Spring 2013
4. Lincoln, A.E., The shifting supply of men and women to occupations: feminization in veterinary education. Social Forces, 88, 1969-1998., 2010
5. Flynn, P., Leeth, J., & Levy, E., The evolving gender mix in accounting: implications for the future of the profession. Selections, Winter, 28, 1996

INSTITUTIONAL PROBLEMS OF SUPPORT FOR SMALL AND MEDIUM BUSINESS IN RUSSIA

Viktor Barkhatov
Chelyabinsk State University, Russia
ieo-science@csu.ru

Antonio Campa
Chelyabinsk State University, Russia
campa@csu.ru

Daria Bents
Chelyabinsk State University, Russia
benz@csu.ru

ABSTRACT

The problem of low efficiency of small and medium business for the Russian economy is an urgent one. The medium business in Russia is almost absent. The share of medium business in gross domestic product is about 0,1%. We investigate features of small and medium enterprises. We focus attention on institutional problems concern regulation of small and medium business. In article the institutional reasons of inefficiency of regulation of small and average business are structured. The quantitative analysis of supporting programs' efficiency is carried out.
Keywords: *small business, medium business, programs of support for small and medium business, features of small and medium enterprises, institutional aspects of supporting programs' efficiency*

1. INTRODUCTION

The Russian Federation has created different support programs for small and medium businesses, Regions and Federal Districts are institutes that regulate such programs (Barhatov et al., 2016, pp. 104-110). Support programs are generally either funding or subsidy; the federal regions or districts regulate these programs, instead the practical granting of funds is the responsibility of the SMP Bank, that in Russian language it means Russian Bank for the development of small and medium-sized enterprises. The SMP Bank is a public bank that is connected to a network of twelve major Russian banks and it acts as guarantor for SMEs when they go to one of these twelve banks for public funding. The main problem is that the actual economic overview in Russia doesn't permit a real development of SMEs; to understand better the difference between Russian and almost all European countries, the reader could pay attention to the following graphic, which shows the number of small and medium enterprises in some European countries in 2012 per 1000 citizens.
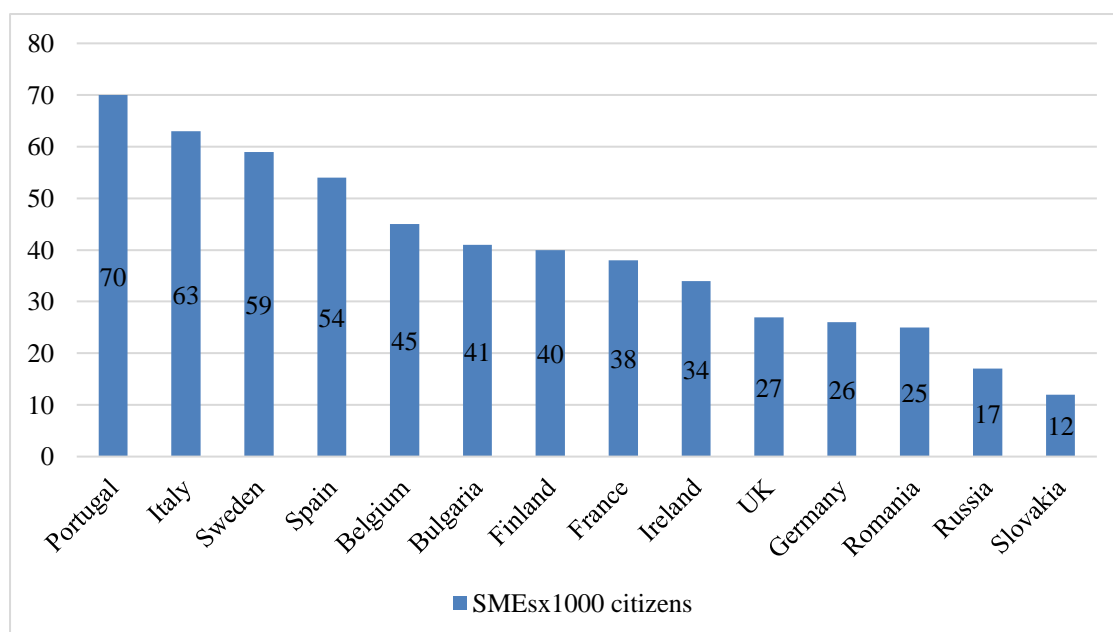
Figure following on the next page

Figure 1: Number of small and medium enterprises per 1000 citizens, European Bank for investments & Rassegna Est, 2011 (https://rassegnaest.wordpress.com/2014/09/01/pmi-unione-europea-russia/)

Russian level (17) is higher only than Slovakia (12); moreover, the unequal development of national Russian economy, creates a situation in which regions of Moscow and Saint Petersburg are more developed than other regions. So it is possible to conclude that the SME's sector in East, South and Asian Russia is less developed then in the European Russia. This situation is the result of a unique economic, social and historical development that made of Russia a particular country with its own economic system that cannot be compared with any other country in the World.

2. LITERARY REVIEW
Generally, the study of the concept of "business success", factors and subjects that affect the successful functioning of small and medium-sized businesses, is reflected in the works of domestic and foreign scientists (Belova, 2015, pp. 20-22). Anyway there are many factors that influence the economic inefficiency, some of them are everywhere, some other are viceversa are typical of some geographical areas. Considering small and medium enterprises, some of main factors that characterized the economic inefficiency are at first their level of technology. Small businesses that invest in new technologies have more probabilities to develop and become a successful business; another general factor is the organization of work; small businesses which are able to divide correctly their production process, they will rationalize their resources better, so they will increase their income and reduce their expenditure (Vinarelli, Piga, Piva, 2004, pp. 655-674). More in details, the problem of organization of work, is better connected with the inappropriate subdivision of labour (Dosi, Marengo, 2011, pp. 247-286); this is not a young problem, indeed also Adam Smith underlined the importance of a correct subdivision of labour. Moreover, subdivision of work can be a form of occupational division of labour because it creates a host of new occupations (Rutherford, 2012, pp. 244-247). Negative factors that influence the development of small and medium enterprises in a specific geographical area can be different, some of theme are in all World but their force depend is different in every nations. Other factors are only is some nations; last factors due to the specific history of a country, to their traditions and culture and in also to their economic history, geological and natural conformation.

Corruption is one of those factors that acts in a different way, depeding of every country; anyway the general corruption trend shows that nations which are more corrupted, have more difficulties to develop small and businesses and usually their techonogical level is lower than not corrupted nations (Barhatov, Pletnev, Campa, 2016, pp. 29-38).

3. A DIFFERENT CONCEPT OF SME - RUSSIAN CASE

One factor that is commonly taken into consideration by Russian economists as an element of development of small and medium-sized enterprises in Russia is partly paradoxically that of the level of industrial development and concentration in a given region or district. Indeed a role that SMEs could take on in the Russian economic context is to support large-scale distribution in sectors traditionally occupied only by large companies, first and foremost the metallurgical sector (Anoshkin, 2017, pp. 80). As also theorized by President Vladimir Vladimirovich Putin, the development of SMEs is also subordinated to large companies, because they can delegate parts of their production to Russian SMEs instead of importing pieces of production, tools or products from abroad. This is a way to think about the role of small and medium enterprises that is completely different than in Western countries, indeed the European Union agrees to think to SMEs as an independent institution that must develop itself considering such indicators as its internationalization or innovation (Camerata, 2012, pp. 117-118). So is possible to affirm that the role of small and medium enterprises in Russia is totally different and it has also a different grade of importance comparing other geographical areas, first of all the Southern Europe.

4. PROBLEMS CONNECTED WITH INSTITUTIONAL SUPPORT PROGRAMS IN RUSSIA

One of the problems that has a negative impact on the success of state development programs for SMEs is the lack of knowledge of regional programs that are sometimes completely independent from federal ones. In 2002 only 28.5% of Russian entrepreneurs knew about regional support programs in their territory (Yasin & others, 2004). Moreover, it is important to underline also that not all the people who are aware of these programs know how to access and use the resources that are made available to them. Over the years this percentage has increased because the importance of these programs in the development of their enterprises has grown in Russians, in any case a good part of the population, especially the younger ones, has not yet been sufficiently familiar with the regional programs that remain less known than the federal ones. The most worrying fact is that it is the young people who are the part of the population that is least interested in these programs, this could become a serious problem in the future, given that young people represent the new ruling class. Furthermore, some main factors that do not help the correct application of development programs for SMEs in Russia. For example, there is no adequate knowledge of tax models by small and medium-sized Russian entrepreneurs. Very often and especially in the most remote areas of Russia, it happens that entrepreneurs do not know the existence of any support systems that could significantly help the survival of their small business, as very often they are not even able to choose the tax regime more suited to their activity. The Russian law has somehow tried to solve this problem by trying to simplify the number of tax regimes; in fact, in Russia there are in total five tax regimes that are the same in all the federal districts (Barhatov, 2016). But it must also be added that sometimes the Russian State, trying to encourage and help small and medium-sized enterprises, ends up obtaining a completely opposite result; a practical example are, for example, forms of fiscal reporting. In recent years, the state has changed these models too frequently, which is why small and medium-sized entrepreneurs get confused very easily, as the law changes rapidly. This factor negatively affects the inability of small business owners to become aware of the laws that regulate tax reporting.

In the end, as has already been written previously, the young generations remain not sufficiently attracted by the possibility of opening and starting their own business, but rather they prefer to aspire to medium-high importance positions in large companies, regardless of whether they are national or foreign. In addition, the young undergraduates and graduates in economics in Russia have a good theoretical knowledge, but they do not find a real application in practical terms. This is why many young people, even if they have successfully conducted their studies, are not able to manage adequately a small economic activity (Zavgorodniy, 2016).

5. THE PROBLEM OF CORRUPTION

The following tables show the Index CPI (Corruption Perceptions Index) in different years: 2007, 2010, 2014 and 2016.

Table 1. Index CPI in 2007, 2010, 2014 and 2016
(https://www.transparency.org/news/feature/corruption_perceptions_index_2016)

Criterion		Index CPI		
Year	2016	2014	2010	**2007**
Germany	8,1	7,9	7,9	**7,8**
U.K.	8,1	7,8	7,6	**8,4**
Russia	2,9	2,7	2,1	**2,5**
Italy	4,7	4,3	3,9	**5,2**
Spain	5,8	6,0	6,1	**6,7**
France	6,9	6,9	6,8	**7,3**
Hungary	4,8	5,4	4,7	**5,3**
Poland	6,2	6,1	5,3	**4,2**
Romania	4,8	4,3	3,7	**3,7**
Lithuania	5,9	5,8	5,0	**4,8**
Latvia	5,7	5,5	4,3	**4,8**
Estonia	**7,0**	**6,9**	**6,5**	**6,5**

In 2016, the Russian Federation index was 2,9, a higher value than in previous years, but is important to underline that it is the worst in Europe (with Ukraine) and actually Russia is 131st for Index CPI considering 176 nations (Transparency International, 2016). Denmark and New Zealand are in the first position with 9, Somalia is the last wih 1 point; Russia has the same value of Ukraine, Kazakhastan and Iran, but it is the worst in the BRICS Area, considering that India, China and Brazil have 4 points, South Africa 4,5. The problem of corruption in Russia is one of main cause that doesn't permit a real development of this sector. A strong bureaucracy that doesn't permit a normal regime of work penalizes small and medium entrepreneurs, entrepreneurs lose too much time in offices and in documents. Therefore, in conclusion, they don't have enough money to pay a company which can help them in this, so the result is that they have to lose time that they can use in their own business. In 2018, considering the ranking of the World Bank, Russia is 35th in the Doing Business Index, moreover it is the first nation in the BRICS area. Looking more in details all factors that regulate the Doing Business Index, is possible to see that in Russia is easy to get a credit(29th) and Start a Business (28th); vice versa the Russian Federation has a very negative performance about Trading Across Borders (100th), Dealing with Constructions Permission (115th) and Protecting Minority Investors (51st) (World Bank, 2018). The following table shows the Ease of doing Business in the best ten regions and their "Starting a Business" rank too in the 2012.

Table 2. Ease of Doing Business and Starting Doing Business Ranking in the Russian Federation, 2012 (http://www.doingbusiness.org/data/exploreeconomies/russia#protecting-minority-investors)

Region	Ease of Doing Business	Starting Doing Business
Ulyanovsk	1	3
Saransk	2	20
Vladivakaz	3	27
Rostov on Don	4	26
Kazan	5	4
Kaluga	6	17
Stavropol	7	4
Yaroslav	8	7
Surgut	9	30
Irkutsk	10	8

Considering their geographical position is possible to affirm that there is not a concentration in a determine part of Russia, some regions are in the East, other in the Southern part of Russia. Let's underline also that Saint Petersburg is the first region for Starting Doing Business but it is only 22nd for Ease fo Doing Business. Considering both ranking, the best region in Russia is absolutely the region of Kazan, namely the Republic of Tatarstan, an autonomous republic in the centre of Russia. The first position of Kazan it is not casual, but it is the result of autonomous decisions that the Republic take, independently of decisions of the Russian Federation.

6. THE CRITICAL PASSAGE FROM PLANNED ECONOMY TO CAPITALISM

Looking at the Soviet Union and which economic system there was, Raya Dunayevskaya underlines the fact that the development of the Soviet economy have long noted that the Soviet Union employs almost every device conventionally associated with capitalism. Soviet trusts, cartels and combines, as well as the individual enterprises within them, are regulated according to strict principles of cost accounting (Dunayevskaya, 2018, pp. 279-282). The principal problem is that if in the Soviet Union, the state had complete power and it regulated, controlled and acted in the economic system, but after the radical passage from socialism to capitalism all this power that was in the hands of the State, it has finished to those of big entrepreneurs. This situation had as result the social division in Russia in 4 classes and not in 3 as in almost all capitalist nations: poor, middle and rich class are three common social classes, as in Russia as in all World, but the '90 reform process has created another class, namely "oligarchs". In economic terms and especially regarding small and medium business's sector, this uncontrolled passage to capitalism created a lot of local, regional and national monopolies and oligopolies that today don't permit to new small business to enter in a specific sectors. In this years these big companies were able to only to control their economic sector, but they establish strong barriers to entry for new companies, so this doesn't permit a fast and effective development of SMEs in Russia.

7. CONCLUSION

Institutional support programs in the Russian Federation are giving positive effects, even if they are not equal for all Russia. The following figure shows the small medium business's trend in the Russian Federation.
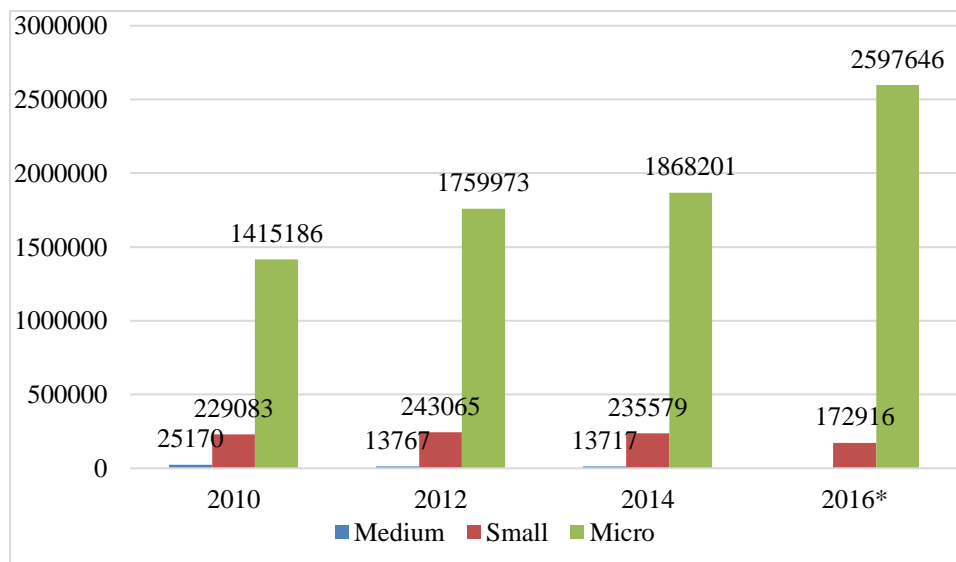
Figure 2. Number of micro, small and medium businesses in the Russian Federation,
(ROSSTAT, 2016,
http://www.gks.ru/wps/wcm/connect/rosstat_main/rosstat/ru/statistics/enterprise/reform/#).
* In 2016 there are not date about number of medium enterprises in Russia

The positive trend regards micro enterprises, while medium and especially small are becoming less. This is one of consequences of the development of Russian economic system, new services and new items are requiring new ideas, innovations and a different mode to make business, for this reason today Russians are taking the decision to risk more for their own business than before. Today support programs in Russia are giving their effects also in a short time terms, so in long terms Russian economy will change in a new directions, that is a more important role for the national economy. Moreover, small and medium enterprises can help to redistribute more equally the national wealthy, give all instruments for the creation of a real middle class (that actually in Russia is not big comparing it with the poor and the rich class in percentage). The state must, in the short period, resolve different problems as the impossibility to talk effectively and fast with entrepreneurs; today Russian people don't believe at all to state instruments, moreover they don't believe that such instruments could change and help their life. Furthermore, the Russian government, in order to have a general and real development, not only economical but at first social, namely corruption. Unfortunately, after the counter revolution of '90 years, Russian society lived for a while in a real chaos, with the total absence of the State. Corruption, in this way is the clearest result of this period. Anyway small and medium business trend, shows that micro enterprises are increasing year by year; moreover international institutions as the World Bank are believing in the Russian future economy. For all these reasons, is possible to conclude that the Russian Government is on the "right road" to reach a real development of the SME's sector in a medium time term.

LITERATURE:
1. Dunayevskaya, R. (2018). Russia: From Proletarian Revolution to State-Capitalist Counter-Revolution: Selected Writings, *Studies in Critical Social Sciences* (p. 279-282).
2. Camerata, M. (2016). Il processo di pianificazione economico-aziendale della transizione generazionale nella PMI [The process of economic-business planning of the generational transition in the PMI], (p. 117-118).
3. Vivarelli, M., Piga, C. & Piva, M. (2004). Il triangolo competitivo: innovazione, organizzazione e lavoro qualificato, issue 4 (p. 655-674), *L'industria, Società editrice il Mulino*.

4. Rutherford, D. (2012). In the shadow of Adam Smith: Founder of Scottish Economics 1700-1900, (p. 244-247).
5. Dosi, G., Marengo, L. (2011) Toward Formal Representations of Search Processes and Routines in Organizational Problem Solving: An Assessment of the State-of-the-Art *Journal of Economics*, N. 24, (p. 247-286), Seoul.
6. Barhatov, V., Pletnev, D., Campa, A. (2016). Key Success Factors and Barriers for Small Businesses: Comparative Analysis. *Procedia: Social Behavioral Sciences* (p. 29-38). Elsevier BV.
7. Belova, I. (2016). Faktory uspeshnosti predpriyatiy malogo i srednego biznesa v Rossii [Successful factors of small and medium-sized businesses in Russia], (p. 20-22).
8. Barhatov, V., Pletnev, D., Nikolaeva, E., Belova, I., Campa, A., Naumova, K (2016). Model' uspeshnogo predpriyatiya malogo i srednego biznesa v Rossii [Model of successful enterprise of Small and Medium-sized Business in Russia, (p. 104-110).
9. Rassegna, Est (2014). *Le PMI in Europa ed in Russia [SME in Europe and in Russia]*. Retrieved 14.03.2018 from https://rassegnaest.wordpress.com/2014/09/01/pmi-unione-europea-russia/ .
10. Anoshkin, A. (2017). Vozrozhdeniye i dinamika razvitiya malogo biznesa v Rossii [Revival and dynamics of development of small busiesses in Russia], (p.80).
11. Zavgorodniy, A. & Other (2016). Aktual'nost' razvitiya malogo srednego predprinimatel'stva v Rossii [The urgency of the development of small and medium-sized enterprises in Russia]. *Simvol Nauki* (p.70-72), St. Petersburg.
12. Barhatov, V. & Belova, I., Vzaimodeystviye gosudarstva s malym i srednim biznesom: nalogovyy aspekt [State interaction with small and medium-sized enterprises: fiscal aspect]. *Ekonomicheskoe vozrozhdenie Rossii*, 1 (47) (p. 162-166). Moscow.
13. The World Bank, (2018). *Doing Business, Measuring Business Regulations*. Retrieved 14.03.2018 from: http://www.doingbusiness.org/data/exploreeconomies/russia#protecting-minority-investors.

PREDICTING THE GROWTH OF RESTAURANTS USING WEB DATA

Yiea-Funk Te
ETH Zurich, Switzerland
fte@ethz.ch

Daniel Muller
ETH Zurich, Switzerland
danielmueller@ethz.ch

Sebastian Wyder
Die Mobiliar, Switzerland
sebastian.wyder@mobi.ch

Dwian Pramono
Die Mobiliar, Switzerland
dwian.pramono@mobi.ch

ABSTRACT
The gastronomy industry plays an important role in the economy of many countries. This is especially true for Switzerland, where the gastronomy industry accounts for a large share of all jobs in small and medium enterprises. However, restaurants are facing tough challenges because of the recent economic turmoil. Despite their importance for the economic growth, limited attention has been paid to predicting restaurant growth. In this study, we propose the use of web mining techniques for restaurant growth prediction as a novel approach. Web mining enables automatic and large-scale collection and analysis of potentially valuable data from various online platforms, thus bearing a great potential for growth prediction. First, a systematic literature review on growth factors is conducted, which serves as a base to collect growth-relevant information from the web. Next, web mining methods are applied to automatically collect and extract growth factors from various web data sources. Finally, we build and compare different binary classification models using supervised machine learning algorithms. More specifically, the developed models classify a restaurant either in a non-growing or growing restaurant. The algorithms for predictive modeling include logistic regressions, random forests and artificial neural networks. Results show that random forests on web data outperform both logistic regressions and artificial neural networks and therefore are recommended for further investigations on predictive modeling of restaurant growth.
Keywords: growth prediction, supervised machine learning, swiss restaurant firms, web mining

1. INTRODUCTION

The gastronomy industry play an important role in the economy of many countries. Especially in Switzerland the gastronomy industry is particularly relevant, as 10% of all jobs in small and medium enterprises are created by gastronomy, acting as the countries backbone for growth (Gastrosuisse, 2017). However, existing studies show that the gastronomy industry is facing many tough challenges because of the recent economic turmoil. Only one-third of all Swiss restaurants generate an appropriate income in order to maintain their existence and expanding their business. Moreover, the study conducted by GastroSuisse (2017) revealed that the sales performance of the gastronomy industry has been dropping continuously over the past eight years, highlighting the urgent need to counteract the negative trend. Given the importance of the gastronomy industry to the Swiss economy, researchers and academics have been analyzing factors influencing the risk and growth of restaurants, and developing models to anticipate

restaurant failure and bankruptcy for many decades (Dimitras et al., 1996). With the emergence of data mining in the research field of SME risk and growth, researchers recently turned their focus on applying data mining techniques for restaurant failure and bankruptcy prediction (Kim and Upnejy, 2014). However, these prediction models only include few data types such as financial or operational data and thus cannot explain the whole and complex context of restaurant growth (Kim and Upnejy, 2014). Moreover, conventional data collection is primarily conducted via questionnaire studies, which is very laborious and time-consuming, or provided by financial institutes, thus highly sensitive to privacy issues. Furthermore, data mining techniques such as artificial neural network and decision tree are extensively studied with a strong focus on the prediction of bankruptcy rather than growth of restaurants. Although numerous studies has attempted to explain the growth of restaurants, studies reporting data mining based restaurant growth models cannot be identified. Simultaneously, web mining has emerged as an important approach to obtain valuable business insights from the web, as enterprises post increasing information about their business activities on websites. In particular, restaurants post their publicly-viewable information on their website and online platforms for various reasons, including promoting their food, presenting their facility and expanding their customer base, with the goal to outperform their competition and increase the sales performance. Furthermore, the web also contain valuable information about the firm's location, specifications of products and services offered, key personnel, and strategies and relationships with other firms. Thus, the web can be viewed as a huge and ever-growing database containing valuable business-related information, which is readily and publicly available, cost-effective to obtain, and extensive in terms of coverage and the amount of data contained. While web mining has shown to be very useful for e-commerce, where any information related to consumer behavior are extremely valuable to anticipate and increase the sales performance (Patel et al., 2011), web mining has been barely used in the research of the hospitality industry (Kong et al.). Considering the vast and increasing amount of data freely available online, web mining bears a great potential in revealing valuable information hidden in web, which can be further used to study the growth of restaurants. In this study, we propose a novel approach for growth modeling which has not been considered so far. We explore the use of web mining techniques for restaurant growth prediction. First, a systematic literature review on growth factors is conducted, which will serve as a base to collect growth-relevant information from the web. Next, web mining methods are applied to automatically collect and extract growth factors from various web data sources. Finally, we build and compare different binary classification models using supervised machine learning algorithms. More specifically, the developed models classify a restaurant either in a non-growing or growing restaurant. The algorithms which have been considered include logistic regressions, random forests and artificial neural networks, which share a predominant role in a range of research domains. The remainder of this paper is structured as follows. First, we provide an overview of the previous work in related research areas. This contains an overview of the hospitality research including restaurant growth modeling and growth factors, followed by a survey of data mining studies in the domain of hospitality research. Next, we provide an overview of the applied methodology. Consequently, we present the results and discuss our findings. This paper concludes with a summary and an outlook on future research.

2. RELATED WORK
2.1. Definition of growth
Growth is considered to be one of the key benchmarks of success by practitioners in the restaurant industry. However, there is no consistency in the dimension of growth which theorists have used as the object of analysis. Different definitions have been used in the studies that attempted to explain the growth of restaurants.

Non-financial growth measures include growth of employment, customer satisfaction and loyalty (Brown and Mitchell, 1993). Financial growth measures include growth of revenues and profits (Cho et al., 2006). In this study, the adopted definition of growth is the growth of revenue, due to its importance to the economy (Lev et al., 2010).

2.2. Survey of factors influencing restaurant growth

The restaurant business environment is complex and covered by a variety of firm-internal and external factors. To discover the factors influencing the growth of restaurants, we conducted a systematic literature review. To make the search process as transparent as possible we followed the guideline for systematic reviews provided by Okoli and Schabram (2010). We first included the top ten journals for hospitality research, which are Journal of Travel Research, Tourism Management, Annals of Tourism Research, Cornell Hospitality Quarterly, International Journal of Hospitality Management, Journal of Service Management, International Journal of Contemporary hospitality Management, Journal of Sustainable Tourism, Journal of Hospitality Marketing and Management and Journal of Hospitality and Tourism Research (Scientific Journal Ranking). Next, we developed a set of keywords describing the review work on the factors influencing restaurant business. The title was restricted to at least one of the following keywords: "restaurant", "gastronomy" and "food service industry". The abstract had to include at least one of the following keywords: "growth", "success", "key determinant", "bankruptcy" and "failure". Our search resulted in 174 papers. In the next step, we validated the relevancy of the 174 articles based on title, abstract, keywords and the full text. Studies not directly related to the performance of restaurants or determinants of growth are excluded from the review, such as "service failure and recovery strategies" or "menu engineering". Finally, we ended up with 107 articles meeting our criteria. To summarize this part of work, we identified 49 factors influencing the growth of restaurants, which can be roughly divided into firm-internal and external factors (see Appendix). Firm-internal factors can be further divided into two groups: (1) the characteristics of the firm such as firm attributes (age, size, location), firm strategies (marketing, business concept) and food-related factors (price, quality and type of food), and (2) the characteristics of the entrepreneur such as socio-demographic characteristics (age, gender, family and educational background) and the personality of the entrepreneur (need for achievement, risk-taking propensity). Firm-external factors can be divided into 2 groups: factors reflecting (1) the immediate and (2) the contextual environment.

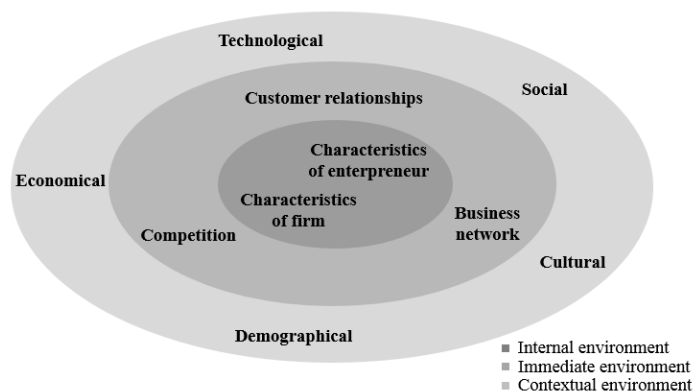*Figure 1: Factors influencing the growth of restaurants.*

The immediate environment includes customer relationship, competition and business network. In contrast, the contextual environment comprises macro-environmental factors such as economical, socio-cultural, technological and demographical determinants on the growth of restaurants. Figure 1 gives an overview of the factors influencing the growth of restaurants.

2.3. Survey of prediction studies for restaurants

For the gastronomy industry, there is not much documented bankruptcy prediction research, and even less for growth prediction (Kim and Gu, 2006). Thus, we provide an overview of bankruptcy prediction studies in the gastronomy industry. Olsen et al. (1983) first attempted to predict business failure in the restaurant industry. In their study, 7 failed restaurant firms were compared with 12 non-failed, using a graph analysis of financial ratios rather than sophisticated models. Later, Multivariate Discriminant Analysis (MDA) and logit analyses have become popular tools for financial distress prediction (Dimitras et al., 1996). Using logistic regression analysis, Cho (1994) extensively investigated business failure in the hospitality industry. Defining failure as a firm with 3 or more years of consecutive negative net income, he developed logistic regression models for predicting restaurant and hotel failures, respectively. Gu and Gao (2000) predicted business failure of hospitality firms by using financial ratios and multivariate discriminant analysis (MDA). They developed a failure prediction model for hospitality firms using a combined sample of hotels and restaurants that went bankrupt between 1987 and 1996. However, these methods suffer from the disadvantages associated with parametric and distribution-dependent approaches (Dragos et al., 2008). Drawbacks to MDA are the assumptions of normally distributed independent variables (Balcaen and Ooghe, 2006), whereas the shortcomings of logit analysis are the assumptions of the variation homogeneity of data (Lee et al., 2006) and the sensitivity to multicollinearity (Doumpos and Zopounidis, 1999). It is well known that these assumptions are incompatible with the complex nature of business growth (Lacher et al, 1995). Consequently, with the emergence of data mining, machine learning algorithms such as random forests (RF) and artificial neural networks (ANN) have been used in an attempt to overcome the above mentions limitations in MDA and logit (Kim and Upnejy, 2014). ANN models have been proposed as an attractive alternative because they are robust to some of these assumptions and do not require a priori specification of the functional relationship between the variables (Jain and Nag, 1997). Various studies report that ANNs models achieve better prediction results than traditional statistical techniques (Lacher et al., 1995; Etheridge et al., 2000; Bloom, 2004). For instance, Zhang et al. (1999) provide a comprehensive review of ANN applications for bankruptcy prediction. However, although many of previous studies report that ANNs models can produce better prediction results than logistic regressions, ANNs do not always result in superior predictive performance, leading to inconclusive outcomes when comparing these two models (Boritz et al., 1995). Thus further studies in the direction of model comparison is needed. Another technique widely applied in various business-related research fields includes decision trees (DT) and their ensemble variations such as random forests (RF). For instance, Gepp et al. (2010) assessed the performance of the DT model for business failure prediction. They compared the prediction accuracy between the DT model and MDA based on Frydman et al.'s (1985) cross-sectional dataset during the period from 1971 to 1981 and included 20 financial variables to ensure the validity of comparisons with their research. They concluded that DT models show better predictive power than MDA. Li et al. (2010) demonstrated the applicability of the DT model in the area of business failure prediction and compared the predictive performance with four other classification methods including MDA, logit, kNN, and SVM. They predicted short-term business failure of Chinese listed companies on Shanghai Stock Exchanges. They used 135 pairs of companies in failure and healthy conditions and concluded that the predictive performance of DT models outperformed the other models for short-term business failure prediction. Another recent and more application-oriented study conducted by Ozgulbas and Koyuncugil (2012) proposed an early warning system based on DT-algorithms for SMEs to detect risk profiles. The proposed system uses financial data to identify risk indicators and early warning signs, and create risk profiles for the classification of SMEs into different risk levels.

In summary, despite the wide use of ANN, DT and RF in various research fields and industries for predictive modelling, the use of these models in the hospitality research is very scarce. Moreover, there have been no previous studies that employed ANNs to predict the growth of restaurants.

2.4. Survey of Web Mining Based Restaurant Growth Prediction Studies

The web is a popular and interactive medium with intense amount of data freely available for users to access. With billions of web pages available in the web, it is a rapidly growing key source of information, presenting an opportunity for businesses and researchers to derive useful knowledge out of it. However, automatically extracting targeted or potential valuable information from the web is a challenging task because of many factors such as size of the web, its unstructured and dynamic content as well as its multilingual nature. Therefore, WM research has emerged for knowledge discovery from the web. Web Mining (WM) denotes the use of data mining techniques to automatically discover Web documents, extract information from Web resources and uncover general patterns on the Web (Etzioni, 1996). WM research overlaps with other areas such as artificial intelligence along with machine learning techniques, data mining, informational retrieval, text mining and Web retrieval. WM research is classified on the basis of two aspects: the retrieval and the mining. The retrieval focuses on retrieving relevant information from large repository whereas mining research focuses on extracting new information already existing data (Sharda and Chawla). In general, WM tasks can be classified into three categories (Kosala and Blockeel, 2000): Web Content Mining, Web structure mining and Web usage mining. WM has been proved very useful in the business world, especially in e-commerce where any information related to consumer behavior are extremely valuable. A major challenge of e-commerce is to understand customers' needs as much as possible, in order to ensure competitiveness in the e-commerce. Thus, WM can be used to find data which have potential value from the website of e-commerce companies. For instance, Morinaga et al. (2002) presented a system for finding the reputation of products from the internet to support marketing and customer relationship management in order to increase the sales growth. The proposed system automatically collects people's opinions about certain target product of webpages and uses different techniques for text mining to get the reputation of those products. Thorleuchter and Van Den Poel (2012) analyzed the impact of textual information from e-commerce companies' websites on their commercial success by extracting web content data from the most successful top 500 worldwide companies. The authors demonstrated how WM and text mining can be applied to extract e-commerce growth factors from the websites. In the technology- and information-driven world, the web has become a popular and interactive medium not only for e-commerce but for restaurants as well. While WM methods has been well researched and used in the field of e-commerce research to increase the sales growth, it has not been applied for restaurant growth research to the best of our knowledge. Furthermore, these studies only focus on the information available in company websites and thus, restrict the amount and spectrum of information typically given in company websites (Gök et al., 2015). Hence, further research investigating the full potential of web data for growth prediction is required.

3. METHODOLOGY
3.1. Data collection
Based on our literature review on the factors influencing the growth of restaurants, we collect information from two different types of data: (1) not publicly available data provided by a large Swiss insurer, and (2) publicly available web data. We first elaborate the data provided by the Swiss insurer, which contain basic information about restaurants and mainly serve as a ground-truth, i.e. labelled data for supervised machine learning.

Next, we describe various web data sources collected to derive the growth-indicating factors, which serve as input features to train a growth prediction models.

3.1.1. Insurer data

The data provided by the Swiss insurer contain information of a set of Swiss restaurant, which consists of the restaurant's name, the annual revenue in the period from 2010-2017 and the type of restaurant, e.g. inn, snack-restaurant, hotel-restaurant etc. Furthermore, each restaurant contain a unique business identification number (UID) assigned by the Swiss Federal Statistical Office to facilitate the corporation between the government and firms. Thus, the data are used as following: (1) as a ground truth to train the growth model by constructing the growth label from the revenue data, (2) as a linkage to collect firm-related data from the web via UID, and (3) to construct input features for model training. In total, data of 2000 Swiss restaurants are collected from the insurer for the purpose of this study.

3.1.2. Web data

Web data related to the set of Swiss restaurants with known revenues (i.e. ground truth) are collected and factors influencing growth are extracted by means of web mining techniques (Mitchell, 2015). First, the usability of various web data sources is manually inspected with respect to the identified growth factors, as summarized in the appendix. In this study, six web data sources are examined.

Central Business Names Index (CBNI): CBNI provides free access to basic firm information and links through to internet excerpts from the individual canton commercial registry databases (für Justiz, 2016). The freely viewable information for each firm includes: UID, firm name, Swiss-wide identification number, registration date, legal form, address, purpose, status, and information about the members of the administrative board and their work function.

TripAdvisor.com (TripAdvisor): TripAdvisor is one of the world's largest tourism communities (TripAdvisor, 2017). Founded in early 2000, it now covers restaurants in more than 190 countries, with over 200 million ratings and reviews autonomously generated by its users. Users can post reviews and opinions of travel-related content, such as hotels, restaurants and attractions. Furthermore, it is possible to add multimedia elements (photos and videos) or travel maps of previous trips or take part in discussion forums, web-based applications that allow users to post some material and discuss some specific topic. Moreover, TripAdvisor allows tourists to rate restaurants in a 5-star marking system from four separate aspects: food, service, value and atmosphere. These four criteria do have been proven to be able to influence consumers' restaurant decision-making (Heung, 2002). Our dataset includes records of 20429 Swiss restaurant, which covers most restaurant businesses of Switzerland. The dataset consists of information about the restaurant name and location, the cuisine type, price category, location-based ranking, number of reviews and review languages, the total ratings and ratings of the four criteria, i.e. food, service, value and atmosphere. Furthermore, since we collected the data of all Swiss restaurants, we geocoded the locations of all restaurants to conduct a competition analysis. Competitive restaurants in the surroundings within a radius between 50m and 300m of our ground truth data are collected. Thereby, restaurants with same cuisine, better overall ratings, lower price category and more reviews are considered as competition, as illustrated in Figure 2 (right).

Open Street Map (OSM): OSM is a free-to-access web-based mapping system for location-based services and general information (OSM, 2016). In this study, two types of datasets are downloaded from the OSM database of Switzerland: (1) the Point of Interest (POI) dataset and

(2) the Roads dataset. POIs are specific point locations on a map that are considered as useful or interesting for specific activities. They are described by the latitude and longitude or address of the location, type, name and contain six categories: public buildings (post, police, bank, school, university), healthcare (hospital, pharmacy, doctor), public transportations (bus, tram, taxi and train station), tourism (museum, attraction, gallery), entertainment (cinema, theatre, casino, arts center, nightclub), parking lots and residential area. The Roads dataset contains 6 types of roads: motorway, trunk roads, primary road, secondary road, tertiary road and unclassified roads, which are described by the latitude and longitude of the nodes spanned across the roads. These datasets are used to derive factors reflecting the infrastructure surrounding the restaurants, which are proven to be influential on restaurants growth (Park and Khan, 2006). Therefore, the restaurant address of the ground truth data collected from the CBNI are geocoded, and the POIs and roads within a radius between 50m and 300m are extracted for each restaurant based in previous studies (Rammer et al., 2016; Chen and Tsai, 2016), as illustrated in Figure 2 (left).

Swiss Federal Statistical Office (SFSO): SFSO is the national service provider and competence center for statistical observations in areas of national, social, economic and environmental importance (Chen and Tsai, 2016).
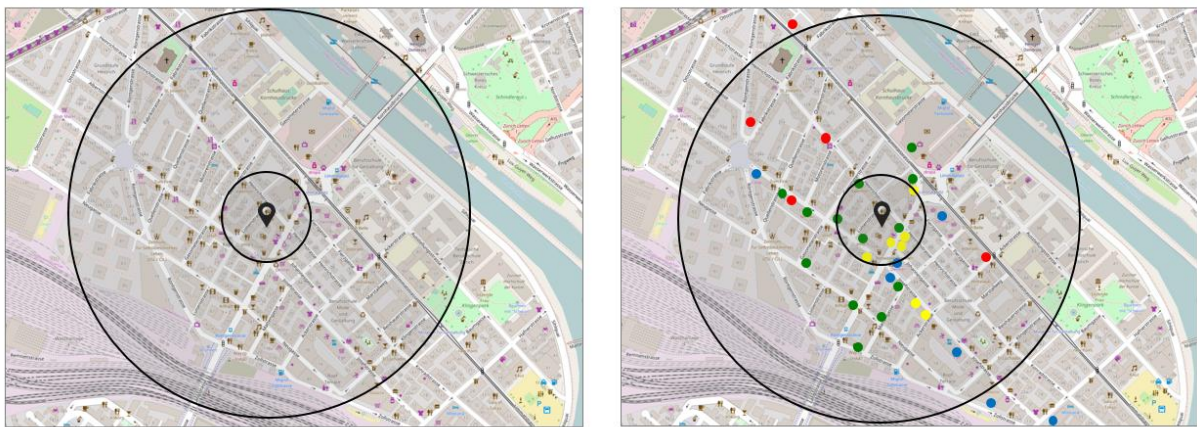
Figure 2: Exemplary illustration of POIs and roads within a radius between 50m and 500m as factors reflecting the infrastructure surrounding a restaurant located in Zurich city (left), and its competition, i.e. restaurants with same cuisine, better ratings, lower price category and more reviews (right, denoted in different colors).

The FSO is the main producer of statistics in the country and runs the Swiss Statistics data pool, providing information on all subject areas covered by official statistics. The dataset include socio-demographic, cultural and economic describing the Swiss population. Many of these factors are considered as significantly influencing the SMEs growth in past studies. The census data were derived from annual portraits provided by the SFSO (Swiss Federal Statistical Office 2016): population density, population change, foreign nationals, age pyramid (young, adult, and old population ratios), area usage (settled and used for agriculture/forests/unused ratios), unemployment rate, residential density (persons per apartment room), and the number of businesses and residents employed in the different economy sectors (primary, secondary, and tertiary sector ratios). All data is aggregated on the level of municipalities - the lowest administrative unit on which Swiss census data is publicly available. Swiss Federal Tax Administration (SFTA): SFTA is the Swiss administration for taxation, which manages the cantonal and municipal tax regulations (Swiss Federal Tax Administration 2016).

The Swiss taxation system is very complex, divided into many tax categories. In this study, we focus on the collection of the corporate taxation, which has proven to influence the restaurant growth (Borde, 1998). Therefore, we extracted two factors reflecting the corporate taxation: (1) the profit tax, based on the net profit as accounted for in the corporate income statement, and (2) the capital tax, which is levied on the ownership equity of companies. The tax data are provided on a cantonal level.

Fast-food chains: Fast-food chain giants such as McDonalds or Starbucks are well-known for conducting an extensive location assessment before a branch is opened (Morland et al., 2002). Thus, in order to evaluate the location quality of our ground truth data, we inspect their proximity to chain branches. Therefore, we collected the geocoded location of all Swiss branches of the best-known fast-food chains, which include McDonald's, Subway, Starbucks and Burger King.

Table1: Data sources and extracted growth factors. A detailed list of all growth factors is given in the appendix.

Data sources	Factor type	Growth factor
Insurer	Firm attributes	Type of restaurant
CBNI	Firm attributes	Age, size
	Firm resources	Human capital
	Organization structure	Work specialization, centralization
	Network	Inter-organizational links
TripAdvisor	Firm attributes	Reputation, service quality, physical environment
	Food	Price, quality, type
	Customer relationships	customer satisfaction & feedback
	Competition	Clusters of restaurants, food pricing
OSM	Technological	Infrastructure, tourism
	Social-cultural	Lifestyle
SFTA	Economical	Taxation
SFSO	Social-cultural	Social class, cultural diversity
	Demographical	Population size, growth & density, age & gender distribution, employment & income, household size
Fast-food chains	Firm attributes	Location

The geocodes of the branches are downloaded from the Google maps on each chain's website (McDonald's Switzerland, 2017; Subway Switzerland, 2017; Starbucks Switzerland, 2017; Burger King Switzerland, 2017). In total, 1783 branches are recorded. In line with the collection of the above mentioned location-based information, the number of branches within a radius between 50m and 300m of our ground truth data are counted as a measure for the location quality. The data from OSM, SFSO and SFTA are downloaded in CSV and PDF format from the respective website. However, the information in CBNI, TripAdvisor and fast-food chains are only visible. Thus, the information given in the fast-food chains' website are manually downloaded, whereas the information given in CBNI and TripAdvisor are automatically collected in the form of HTML files by applying web scraping techniques (Mitchell, 2015).

Therefore, a self-developed scraper based on Python is deployed. Next, text mining methods are used to extract information of our interest and to store them in a structure format. Therefore, we use the python library BeautifulSoup (Richardson, 2007). In total, 27 out of the 49 identified growth factors are extracted from the above mentioned web data sources. The web data sources along with the extracted growth factors are summarized in Table 1.

3.2. Data sources linkage

Data quality management is a crucial challenge in database management aiming at an improved usability and reliability of the data. Entity identification is defined as the detection and merging of two or more records representing the same real-world identity across multiple data sets, which is relevant in duplicate detection and elimination as well as data integration. Apart from data cleaning, data integration and data warehousing, entity identification is closely related to information retrieval, pattern recognition and data mining as well, thus, making use of ideas from several research areas (e.g. Bilenko et al., 2003). With the tremendous growth of web data sources, entity identification became an important issue in data warehousing (Aizawa and Oyama 2005). In this study, we adopt the data linkage method described by Denk (2009) to combine data provided by the Swiss insurer with data of various web data sources. As shown in Figure 3, our linkage approach is a semi-automated and rule- & knowledge-based method, which offers a high degree of flexibility and tuning possibilities, resulting in good data quality (Denk, 2009). In the first step, insurer data are matched with the CBNI data source via UID, as the UID is unique for each firm. Next, a set of matching variables are defined to further match our newly created database (i.e. insurer data linked with CBNI data) with TripAdvisor data. Since the officially registered legal firm name in CBNI may differ from the actual restaurant name given in TripAdvisor, we used the following matching criteria for this matching step: name, postcode and street. String variables, such as names and addresses have to be pre-processed to be comparable among data sets.
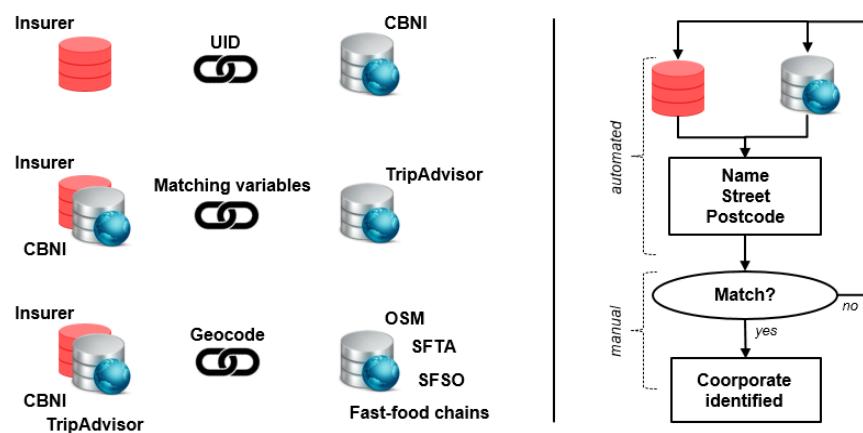
Figure 3: Linking corporate data with web data

Therefore, standardization and parsing are required. Standardization refers to the conversion of values to a consistent format. Parsing deals with the decomposition of a string variable into a common set of components that are better comparable, as for instance splitting up a general address variable into postcode, city, street address and number. Then, location-based web data sources (OSM, SFSO, SFTA, fast-food chains) are matched with the geocoded address of our database. The processes are conducted automatically and the potential matches are returned for each ground truth sample. In the last step, to ensure a high data quality, the potential matches are inspected manually.

Based on our knowledge and expertise, the final decision is taken. Note, that only one among multiple matches are chosen or all matches will be discarded to ensure a high data quality for model building. In total, 516 restaurants of the initial 2000 restaurants could be successfully identified and matched with web data sources.

3.3. Label creation & data preprocessing
3.3.1. Growth label creation
A crucial part of the data mining procedure is to define the proper label based on the business objective for data mining analysis. In this study, we test binary classification models for restaurant growth, i.e. separating restaurants into non-growing and growing ones. In the first step, we use the annual revenue between 2010 and 2016 to calculate the relative change of revenue over the corresponding timespan using linear regression (Montgomery et al., 2012). Figure 4 shows the distribution of the ground truth data as a function of the relative revenue growth in percent. Out of 403 restaurants, 73 restaurants (18.11%) showed a negative revenue growth (relative_growth < 0), whereas 234 restaurants (58.06%) showed no signs of growth (relative_growth = 0), and 96 restaurants (23.83%) experienced a growth between 2010 and 2016 (relative_growth > 0). Since the primary interest of our study is to model the growth of restaurants, a cut off value of 0.0% is chosen to separate non-growing restaurants from the growing ones. To construct the binary labels, restaurants showing no signs of growth are assigned the value 0, whereas growing restaurants are assigned the value 1. Finally, the dataset consists of 307 samples with 0 as the majority class (76.18%) and 96 samples labelled with 1 as the minority class (23.82%).

3.3.2. Input feature creation
The input features for growth modelling are derived from the collected web data as described in Table 2. The information from the Swiss insurer, SFSO and SFTA are provided in the form of structured numerical and categorical data and thus, require minimal data preprocessing. In contrast, the information extracted from CBNI and TripAdvisor are provided in the form of textual information, whereas data from OSM and fast-food chains are presented as geographical coordinates. First, the textual information are converted to a numeric representation. For instance in CBNI, registration date of firms are converted to a number of months to represent the age the of firm, work specialization are approximated by the number of distinct job functions, and the centralization of work are given in the form of a binary-valued variable by verifying the existence of sole signature authority within the firm. $The OSM and fast-food chains data are stored in PostgreSQL, a powerful, free and open-source database system typically used for geographical data (Stonebraker and Kemnitz, 1991). To derive the features reflecting the infrastructure and competition, the objects of interest within a radius between 50m and 300m are counted, e.g. counts of restaurants. Therefore, we make use of the function ST_DWithin() from the Python library pygresql, which returns a Boolean value which is True, if the object of interest is within the defined distance (Cain, 2006). Because web data are often incomplete, the generated features are incomplete. Missing data treatment should be carefully treated, otherwise bias might be introduced into the knowledge induced (Batista and Monard, 2003). In our dataset, the range of missing data are between 0% and 52%, with TripAdvisor data containing the most missing data due to the incompleteness of information generated by TripAdvisor users. To address this issue, the following measures have been taken based on the business and structural characteristics of the features: 1) delete samples if only few samples are involved (missing data less than 10%), 2) delete features if imputation is not suitable, 3) impute missing numerical values with the mean value (Batista and Monard, 2003), and 4) impute missing categorical value with -1 which represents the absence of a particular information (Gryzmala-Busse and Hu, 2000). Furthermore, features with zero variance and high correlation

(Pearson correlation coefficient $r_{prs} \geq 0.95$) are removed (Hunt, 1986). In total, 85 input features are generated for the purpose of supervised machine learning, as summarized in Table 2. Note, that features denoted with a digit at the end are dummy variables derived from categorical features. In total, 85 input features are generated for the purpose of supervised machine learning, as summarized in Table 2. Note, that features denoted with a digit at the end are dummy variables derived from categorical features.

3.4. Construction of the growth models

Restaurant growth is a highly complex mechanism, thus predicting the growth of restaurants requires machine learning algorithms which are capable to handle a high level of complexity. Therefore, we use the Random Forest Classifier (RFC) and Multi-layer Perception (MLP) neural network, a subclass of ANN, which are able to model complex interactions between the input variables and thus, share a predominant role in a range of research domains (Cutler et al. 2007). Furthermore, logistic regression (LR) is chosen as a benchmark due to its wide use for economic modelling in the past (Youn and Gu, 2010). RFC is a non-parametric non-linear classification algorithm that fits an ensemble of decision trees to a dataset, and then combines the predictions from all the trees. From the ensemble of trees, the predicted class of an observation is calculated as the class with the majority vote (Breiman et al., 2004). Furthermore, a by-product of the random forest algorithm is the measure of feature importance, which allows a data-based evaluation of the relative importance of the growth factors.
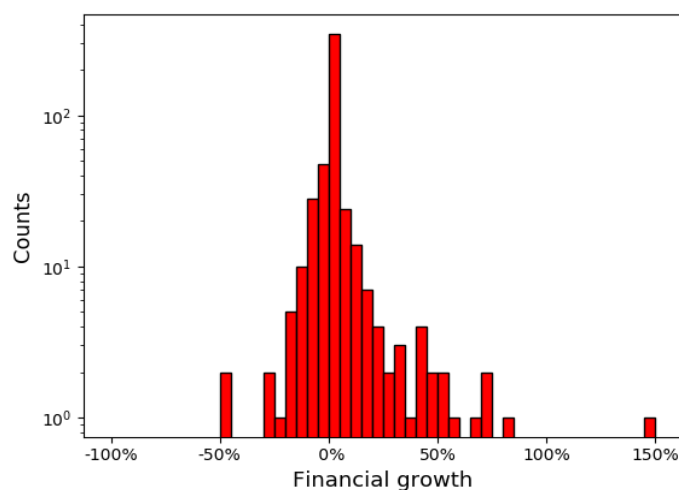

Figure 4: Distribution of the ground truth data (histogram bins = 50)

Table following on the next page

Table 2: Input features for supervised machine learning algorithms.

Feature ID	Feature name	Feature ID	Feature name
1	Revenue level	44	Streets within 50m
2	Restaurant type 1	45	Pedestrian zones within 50m
3	Restaurant type 2	46	Parking lots within 50m
4	Restaurant type 3	47	Public transportation within 50m
5	Firm age	48	Public building within 50m
6	Management size	49	Residential within 50m
7	Centralization of work	50	Fast-food chains within 50m
8	Ratio management vs functions	51	Tourism within 300m
9	Legal form 1	52	Motorway within 300m
10	Legal form 2	53	Streets within 300m
11	Legal form 3	54	Pedestrian zones within 300m
12	Number of cuisine	55	Parking lots within 300m
13	Number of feedback	56	Public transportation within 300m
14	Ranking	57	Public building within 300m
15	Number of feedback languages	58	Healthcare within 300m
16	Rating overall	59	Entertainment within 300m
17	Rating best	60	Residential within 300m
18	Rating good	61	Number of restaurants within 50m
19	Rating satisfied	62	Number of restaurants with same cuisine within 50m
20	Rating insufficient	63	Number of restaurants with lower price within 50m
21	Rating bad	64	Number of restaurants with more review within 50m
22	Rating service	65	Number of restaurants with better feedback within 50m
23	Rating cuisine	66	Number of restaurants within 300m
24	Rating quality	67	Number of restaurants with same cuisine within 300m
25	Number of meal type	68	Number of restaurants with lower price within 300m
26	Meal type 1	69	Number of restaurants with more review within 300m
27	Meal type 2	70	Number of restaurants with better feedback within 300m
28	Meal type 3	71	Business network size: only direct partners
29	Meal type 4	72	Business network size: including indirect partners
30	Number of characteristics	73	Business network density
31	Characteristics 1	74	Population
32	Characteristics 2	75	Population density
33	Characteristics 3	76	Foreigner
34	Characteristics 4	77	Population (0 to 19 years)
35	Characteristics 5	78	Population (20 to 64 years)
36	Characteristics 6	79	Population (over 64 years)
37	Number of occasions	80	Housing ownership rate
38	Occasion 1	81	Empty flat rate
39	Occasion 2	82	Rating atmosphere 1
40	Occasion 3	83	Rating atmosphere 2
41	Price 1	84	Rating atmosphere 3
42	Price 2	85	Rating atmosphere 4
43	Tourism within 50m		

MLP neural network is powerful machine learning algorithm for pattern recognition and classification due to the non-linear, non-parametric adaptive learning properties and thus, is capable of modelling highly non-linear relationships (Haykin et al., 2009). MLPs are typically composed of at least three layers of nodes: the input layer, at least one hidden layer and the output layer. The network architecture is characterized a large set of parameters, such as the number of layers, the number of nodes in each layer and how the nodes are inter-connected. The input layer consists of input features, whereas the output layer produces the model outcome. In between, there are one or more hidden layers which aims at model the complex relationship between the input layer and the output layer. One drawback of MLPs, when compared to RFC, is their limited explanatory power due to the "black-box" nature of MLPs. LR is another machine learning algorithm estimates the relationship between the dependent variable and a set of features using a logistic function (Storey et al., 1990). Furthermore, the relative contribution of each feature on the actual classification can be determined, which is a key advantage in contrast to the MLPs (Neophytou and Molinero, 2004). In the first step, our dataset is split into a training and test set following a 90/10 ratio. The training set are used for hyper-parameter tuning and model training, while the test data set is used to report models' performance. To optimize models' hyper-parameters, we conducted a randomized grid search to find the optimal value for the parameters for each classifier with 500 iterations, i.e. 500 combinations of hyper-parameters are tested for each classifier. Randomized grid search was chosen over the standard grid search method due to the reduced computational time while producing comparative results (Bergstra and Bengio, 2012). Furthermore, in order to validate the optimized classifiers to the training set, a stratified 10-fold cross-validation procedure was applied for model selection. In a stratified 10-fold cross-validation (CV), the original sample is partitioned into 10 subsamples while maintaining the ratio of the classes in the target variable. Of the 10 subsamples, a single subsample is retained as the validation data for testing the model, while the remaining 9 subsamples are used as training data. The CV process is then repeated 10 times (the folds), with each of the 10 subsamples used exactly once as the validation data. The 10 results from the folds is averaged to produce a single performance estimation on the training set for model selection (Kohavi, 1995). Thereby, we make use the function RandomizedSearchCV() of the Python library sklearn, which combines both of the aforementioned methods (Pedregosa et al., 2011). Finally, the performance of the final model is reported on the test set. Furthermore, in order to reduce the variance due to the training-test split, and to obtain reliable performance estimation for model comparison, we repeated the aforementioned procedure multiple times (Kim, 2009). Therefore, we successively split our dataset into training and test set, and execute the proposed procedure multiple times. Thereby, the dataset is reshuffled and re-stratified before each round. Finally, we then report the average performances of the classifier families, i.e. RFCs, MLPs and LRs. In this study, the number of repeats is set to 10. To compare and evaluate the classification performance of our classification algorithms, we make use of the area under the receiver operating characteristic curve (AUC) measure, a commonly used measure for model comparison and effective evaluation of the accuracy measure (Bradley, 1997). In order to provide further insights on the classification performance, accuracy - the overall percentage correctly classified, sensitivity - the fraction of samples correctly classified as growing restaurants, and specificity - the percentage of samples correctly classified as non-growing restaurants, are reported together with the AUC measure. Note, that the performance measures are determined for each repeat, and finally averaged and reported as the mean performance of the classification method along with the standard deviation.

4. RESULTS
We first evaluate the models based on the performance measures mentioned above. Subsequently, we elaborate the explanatory power of the input features by reporting the mean

feature importance across the RFCs, which is an inherent measure of the random forest algorithm. In addition, we report the relative contribution of each feature from LRs as a mean feature importance measure by following the study concept of Grömping (2009). Finally we discuss and compare the factors influencing the growth of restaurants of our RFCs and LRs. Table 3 shows the average classification performance of RFCs, MLPs and LRs with respect to a binary classification of samples into non-growing and growing restaurants. Based on the AUC and accuracy, RFCs yield the best results among the tested models, with mean AUC and accuracy of 68.1% and 68.0% respectively. LRs reports slightly lower mean AUC and accuracy of 65.8% and 66.3% respectively, which clearly outperform the MLPs with mean AUC and accuracy of 62.0% and 57.7% respectively. Furthermore, our results suggest that both RFCs and MLPs favored specificity over sensitivity, while LRs favored sensitivity over specificity. Figure 5 depicts the mean feature importance plot of our RFCs (left) and LRs (right) only for the top 20 features due to the large amount of input features, which have been used to train the models. Despite the different ranking of the RFCs' and LRs' features, we can observe five common features among the top 20 features, namely features related to the price of food (feature 41), competition (feature 63 and 68), firm characteristics (feature 30) and demographical factor (feature 79). The feature importance of RFCs shows, that "firm age" (feature 5) is clearly the most predictive feature with a with a substantially larger importance value than all other predictors, followed by the number of feedbacks given in TripAdvisor (feature 13), the overall ranking of the restaurant in TripAdvisor (feature 14), and the rating "best" (feature 17). The subsequent features are characterized by a mixture of features reflecting factors mainly related to the demographics, customer relationship and competition. The top 20 features of LRs are characterized by a set of factors with a flat distribution of the relative importance. In line with the feature importance of RFCs, factors reflecting the competition play in important role for LRs as well (feature 63, 68 and 69). However in contrast to RFCs, the top 20 features of RFCs are governed by factors reflecting the infrastructure, such as the proximity to public transportation, building, parking lots and fast-food chains (feature 48 - 50, 55 - 56).

5. CONCLUSION

In this study we analyze the use of web data for the purpose of predicting the financial growth of restaurants. First, 49 factors influencing the growth of restaurants are identified through an extensive literature review, as summarized in the Appendix. Next, a set of web data sources are examined with regards to the identified growth factors. Within the scope of this study, six web data sources containing information reflecting the business internal and external environment of restaurants are identified: Central Business Names Index, TripAdvisor, OpenStreetMap, Swiss Federal Statistical Office, Swiss Federal Tax Administration and fast-food chains data.

Table 3: Average performance of classifier families.

	AUC	Accuracy	Sensitivity	Specificity
Random forests	68.1 ± 5.0 %	68.0 ± 7.0 %	65.6 ± 17.0 %	68.8 ± 15.0 %
Multi-layer perceptrons	62.0 ± 6.0 %	57.7 ± 6.0 %	72.2 ± 11.0 %	52.7 ± 10.0 %
Logistic regressions	65.8 + 8.0 %	66.3 ± 6.0 %	60.0 ± 15.0 %	68.5 ± 10.0 %

The data are either downloaded from the websites or collected by means of web scraping. Text mining methods are applied to extract the growth factors from textual information and to construct the input features for predictive modelling. Therefore, RFCs, MLPs and LRs are tested and compared with the goal to predict a binary outcome, i.e. non-growing versus growing restaurants.

Our results suggest, that RFCs with a mean accuracy of 68% outperform MLPs and LRs. Furthermore, our study shows that the LRs is not inferior to MLPs in terms of growth prediction accuracy for restaurants, as opposed to many studies reporting MLPs' better prediction accuracy when compared to LCRs. The feature importance measure of our RFCs and LRs suggest that information related to customer relationship extracted from TripAdvisor are very useful to model the growth of restaurants. Moreover, external environmental factors such as the infrastructure, competition and demographics also play an crucial role, highlighting the importance of including a wide range of factors when modelling the growth of restaurants. To the best of our knowledge, this study is the first to apply WM techniques combined with supervised machine learning techniques to model the growth of restaurants. Our result demonstrates the potential of building growth prediction models for restaurants based on publicly accessible web data. This study has both theoretical and practical implications. It contributes to the existing literature of restaurant growth research by confirming previous findings in a data-driven and model-based manner through machine learning. Furthermore, the proposed approach can be used to identify new growth factors based on the feature importance measures of RFCs and LRs thus, extend the empirical body of knowledge. As a practical application, the proposed research method can be used to build an information system which allows an automated collection and analysis of publicly available web data in large scale with the objective of predicting future growth opportunities of restaurants.
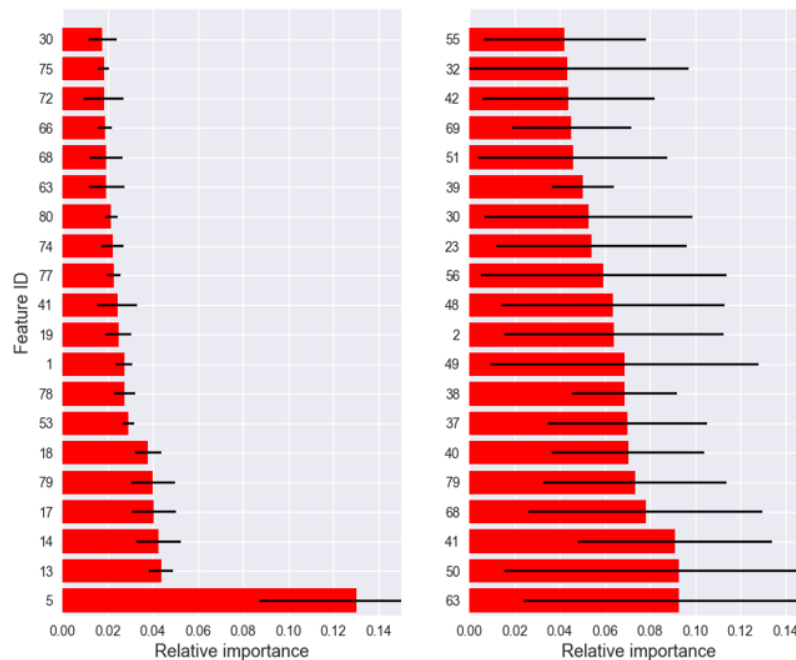
Figure 5: Feature importance plot including the top 20 features of RFCs (left) and LRs (right)

6. LIMITATIONS AND FUTURE WORK

This study is not without limitations and provides several opportunities for further research. First, our work is limited to Switzerland, thus the obtained results might differ in different geographical regions. Second, the revenue data of restaurants are provided by an insurer, which might differ from the actual revenue. Third, important growth factors completing the firm-internal environment, such as the characteristics of the entrepreneur (appendix) are not included in our model because they are not available in the examined web data sources. To address this issue, we plan to apply web mining techniques to collect and preprocess textual information

given in company websites and social platforms like Xing, with the goal to enlarge the input feature space of our model. Finally, we plan to test other machine learning methods such as stacking classifiers with to goal to optimize the performance restaurant growth prediction.

LITERATURE:
1. Aizawa A. and Oyama K. (2005). A Fast Linkage Detection Scheme for Multi-Source Information Integration, in: *Proc. WIRI'05,* 30-39.
2. Balcaen, S. and Ooghe, H. (2006). Thirty-five years of studies on business failure: and overview of the classic statistical methodologies and their related problems. *Br. Account. Rev.* 38 (1), 63–93.
3. Batista, G. E. and Monard, M. C. (2003). An analysis of four missing data treatment methods for supervised learning. *Applied artificial intelligence* 17(5-6), 519-533.
4. Batista, G. E. and Monard, M. C. (2003). An analysis of four missing data treatment methods for supervised learning. *Applied artificial intelligence* 17(5-6), 519-533.
5. Bergstra, J., and Bengio, Y. (2012). Random search for hyper-parameter optimization. *Journal of Machine Learning Research* 13: 281-305.
6. Bilenko M., Mooney R., Cohen W., Ravikumar P. and Fienberg S. (2003) Adaptive Name Matching in Information Integration. *IEEE Intelligent Systems* 18(5), 16-23.
7. Bloom, J. Z. (2004). Tourist market segmentation with linear and non-linear techniques. *Tourism Management* 25(6), 723-733.
8. Borde, S. F. (1998). Risk diversity across restaurants: An empirical analysis. *Cornell Hotel and Restaurant Administration Quarterly* 39(2), 64-69.
9. Boritz, J. E., Kennedy, D. B. and Albuquerque, A. (1995). Predicting corporate failure using a neural network approach. *Intelligent Systems in Accounting, Finance and Management* 4, 95-111 .
10. Bradley, A. P. (1997). The use of the area under the ROC curve in the evaluation of machine learning algorithms. *Pattern recognition* 30(7), 1145-1159.
11. Breiman, L., Chen, C. and Liaw, A. (2004). Using random forest to learn imbalanced data. *Journal of Machine Learning Research* p. 666.
12. Brown, K. A. and Mitchell, T. R. (1993). Organizational obstacles: Links with financial performance, customer satisfaction, and job satisfaction in a service environment. *Human Relations* 46(6), 725-757.
13. Cain, D. J. M. (2006). PyGreSQL–PostgreSQL module for Python. URL: http://www. pygresql. org.
14. Chen, L. F., and Tsai, C. T. (2016). Data mining framework based on rough set theory to improve location selection decisions: A case study of a restaurant chain. *Tourism Management* 53, 197-206.
15. Cho, Min-Ho (1994). *Predicting business failure in the hospitality industry: An application of logit model.* Doctoral dissertation, Virginia Polytechnic Institute and State University.
16. Cho, S., Woods, R. H., Jang, S. S. and Erdem, M. (2006). Measuring the impact of human resource management practices on hospitality firms' performances. *International Journal of Hospitality Management 25*(2), 262-277.
17. Cutler, D. R., Edwards, T. C., Beard, K. H., Cutler, A., Hess, K. T., Gibson, J. and Lawler, J. J. (2007). Random forests for classification in ecology. *Ecology* (88:11), pp. 2783-2792.
18. Denk, M. (2009). A framework for statistical entity identification to enhance data quality. *Insights on Data Integration Methodologies* 89.
19. Dimitras, A. I., Zanakis, S. H., and Zopounidis, C. (1996). A survey of business failures with an emphasis on prediction methods and industrial applications. *European Journal of Operational Research* 90(3), 487-513.

20. Doumpos, M. and Zopounidis, C. (1999). A multicriteria discrimination method for the prediction of financial distress: the case of Greece. *Multinatl. Finance J.* 3 (2), 71–101.
21. Dragos, C., Dragos, S. and Emitru, A. (2008). Financial scoring: a literature review and experimental study. *Econ. Bus. Rev.* 10 (1), 53–66.
22. Etheridge, H . L ., Sriram, R. S. and Hsu, H. Y. K. (2000). A comparison of selected artifi cial neural networks that help auditors evaluate client financial viability. *Decision Sciences* 31(2), 531-550 .
23. Etzioni, O. (1996). The World-Wide Web: quagmire or gold mine?. *Communications of the ACM* 39:11, pp. 65-68.
24. Frydman, H., Altman, E., Kao, D. (1985). Introducing recursive partitioning for financial classification: the case of financial distress. *J. Financ.* 40 (1), 269–291.
25. für Justiz, B. (2001). *Zefix-Der zentrale Firmenindex auf Internet*. Reden, 2000, 1999.
26. Gastrosuisse (2017). *Branchenspiegel 2017*. Gastrosuisse, Verband für Hotellerie und Restauration.
27. Gepp, A., Kumar, K., Bhattacharya, S. (2010). Business failure prediction using decision trees. *J. Forecast.* 2(6), 536–555.
28. Gök, A., Waterworth, A. and Shapira, P. (2015). Use of web mining in studying innovation. *Scientometrics* (102:1), pp. 653-671.
29. Grömping, U. (2009). Variable importance assessment in regression: linear regression versus random forest. *The American Statistician* 63(4), 308-319.
30. Grzymala-Busse, J. W. and Hu, M. (2000). A comparison of several approaches to missing attribute values in data mining. In: *International Conference on Rough Sets and Current Trends in Computing* pp. 378-385.
31. Gu, Z., and Gao, L. (2000). A multivariate model for predicting business failures of hospitality firms. *Tourism and Hospitality Research: The Survey Quarterly Review* 2(1), 37-49.
32. Haykin, S. S., Haykin, S. S., Haykin, S. S. and Haykin, S. S. (2009). *Neural networks and learning machines (Vol. 3).* Upper Saddle River, NJ, USA:: Pearson.
33. Heung, V. C. (2002). American theme restaurants: A study of consumer's perceptions of the important attributes in restaurant selection. *Asia Pacific Journal of Tourism Research* 7, 19-28.
34. Jain , B . A . and Nag , B. N. (1997) Performance evaluation of neural network decision models. *Journal of Management Information Systems* 14(2), 201-216 .
35. Kim, H., and Gu, Z. (2006). A logistic regression analysis for predicting bankruptcy in the hospitality industry. *The Journal of Hospitality Financial Management* 14(1), 17-34.
36. Kim, J. H. (2009). Estimating classification error rate: Repeated cross-validation, repeated hold-out and bootstrap. *Computational statistics & data analysis* 53(11), 3735-3745.
37. Kim, S. Y. and Upneja, A. (2014). Predicting restaurant financial distress using decision tree and AdaBoosted decision tree models. *Economic Modelling* 36, 354-362.
38. Kong, A., Nguyen, V., and Xu, C. (2015). *Predicting International Restaurant Success with Yelp.*
39. Kosala, R. and Blockeel, H. (2000). Web Mining Research: A Survey. *ACM SIGKDD Explorations Newsletter* (2:1).
40. Lacher, R., Pamela, S., Sharma, L. and Fant, A. (1995). A neural network for classifying the financial health of a firm. *Eur. J. Oper. Res.* 85 (1), 53–63.
41. Lee, T., Chiu, C., Chou, Y. and Lu, C. (2006). Mining the customer credit using classification and regression tree andmultivariate adaptive regression splines. *Comput. Stat. Data Anal.* 50 (4), 1113–1130.

42. Lev, B., Petrovits, C. and Radhakrishnan, S. (2010). Is doing good good for you? How corporate charitable contributions enhance revenue growth. *Strategic Management Journal* 31(2), 182-200.
43. Li, H., Sun, J. and Wu, J. (2010). Predicting business failure using classification and regression tree: an empirical comparison with popular classical methods and top classification mining methods. *Expert Syst. Appl.* 37(8), 5895–5904.
44. McDonald's Switzerland (2017). https://www.mcdonalds.ch/de/restaurants/.
45. Mitchell, R. (2015). *Web Scraping with Python: Collecting Data from the Modern Web.* O'Reilly Media, Inc.
46. Montgomery, D. C., Peck, E. A., and Vining, G. G. (2012). *Introduction to linear regression analysis (Vol. 821).* John Wiley & Sons.
47. Morinaga, S., K. Yamanishi, K. Tateishi and Fukushima, T. (2002). Mining product reputations on the web. In: *Proceedings of the eighth ACM SIGKDD international conference on Knowledge discovery and data mining, ACM,* pp. 341-349.
48. Morland, K., Wing, S., Roux, A. D., and Poole, C. (2002). Neighborhood characteristics associated with the location of food stores and food service places. *American journal of preventive medicine* 22(1), 23-29.
49. Neophytou , E. and Molinero, C. M. (2004). Predicting corporate failure in the UK: A multidimentional scaling approach. *Journal of Business Finance and Accounting* 31(5/6), 677 – 710.
50. Okoli, C., and Schabram, K. (2010). *A guide to conducting a systematic literature review of information systems research.*
51. Olsen, M., Bellas, C., and Kish, L. V. (1983). Improving the prediction of restaurant failure through ratio analysis. *International Journal of Hospitality Management* 2, 187-193.
52. OSM Data for Switzerland 2016. http://planet.osm.ch/
53. Ozgulbas, N. and Koyuncugil, A. S. (2012). Risk Classification of SMEs by Early Warning Model Based on Data Mining. *World Academy of Science, Engineering and Technology, International Journal of Social, Behavioral, Educational, Economic, Business and Industrial Engineering* (6:10), pp. 2649-2660.
54. Park, K., and Khan, M. A. (2006). An exploratory study to identify the site selection factors for US franchise restaurants. *Journal of Foodservice Business Research* 8(1), 97-114.
55. Patel, K. B., Chauhan, J. A. and Patel, J. D. 2011. Web Mining in E-Commerce: Pattern Discovery, Issues and Applications. *International Journal of P2P Network Trends and Technology* (1:3), pp. 40-45.
56. Pedregosa, F., Varoquaux, G., Gramfort, A., Michel, V., Thirion, B., Grisel, O., ... & Vanderplas, J. (2011). Scikit-learn: Machine learning in Python. *Journal of machine learning research* 12, 2825-2830.
57. Rammer, C., Kinne, J. and Blind, K. (2016). *Microgeography of innovation in the city: Location patterns of innovative firms in Berlin.*
58. Richardson, L. (2007). *Beautiful soup documentation.*
59. Ron Kohavi (1995). A study of cross-validation and bootstrap for accuracy estimation and model selection. In: *International Joint Conference on Artificial Intelligence* pp. 1137-1145.
60. Ronald J. Hunt (1986). Percent agreement, Pearson's correlation, and kappa as measures of inter-examiner reliability. *Journal of Dental Research* 65(2), 128-130.
61. Scientific Journal Ranking. http://www.scimagojr.com/journalrank.php?category=1409
62. Sharda, D. and Chawla, S.. Web Content Mining Techniques-A Study. *International Journal of In-novative Research in Technology and Science (IJIRTS).*
63. Starbucks Switzerland (2017). http://www.starbucks.ch/store-locator/search.

64. Stonebraker, M., and Kemnitz, G. (1991). The POSTGRES next generation database management system. *Communications of the ACM* 34(10), 78-92.
65. Storey, D., Keasey, K., Watson, R. and Wynarczyk, P. (1990). *The Performance of Small Firms: Profits, Jobs, and Failures.* London: Routledge Small Business Series.
66. Subway Switzerland (2017). http://www.subway-sandwiches.ch/restaurants.php.
67. Swiss Federal Statistical Office 2016.
http://www.bfs.admin.ch/bfs/portal/en/index/infothek/onlinedb/stattab.html.
68. Swiss Federal Statistical Office: STAT-TAB 2016.
http://www.bfs.admin.ch/bfs/portal/en/index/infothek/onlinedb/stattab.html.
69. Swiss Federal Tax Administration 2016. https://www.estv.admin.ch/.
70. Thorleuchter, D. and Van Den Poel, D. 2012. "Predicting e-commerce company success by mining the text of its publicly-accessible website," Expert Systems with Applications (39:17), pp. 13026-13034.
71. TripAdvisor (2017). https://www.tripadvisor.ch/.
72. Youn, H., & Gu, Z. (2010). Predict US restaurant firm failures: The artificial neural network model versus logistic regression model. *Tourism and Hospitality Research* 10(3), 171-187.
73. Zhang, G., Hu, M. Y., Patuwo, B. E. and Indro, D. C. (1999). Artificial neural networks in bankruptcy prediction: General framework and cross-validation analysis. *European journal of operational research* (116:1), pp. 16-32.

APPENDIX

Business environment		Factor type	Growth factor
Internal environment	Characteristics of firm	Firm attributes	Age of firm Size Location Reputation Service quality Physical environment Type of restaurant Kitchen & service operation
		Firm resources	Financial resources Human capital
		Firm strategies	Marketing / innovation Restaurant concept Service cycle optimization Business / menu planning HR management
		Food	Price Quality Type Variety of menu
	Characteristics of entrepreneur	Organization structure	Work specialization Centralization Legal form
		Socio-demographic	Age of entrepreneur Family background Education Experience
		Personality	Need for achievement Locus of control Attitude
		Competences	Managerial Entrepreneurial
External environment	Immediate environment	Customer relationships	Customer / market needs Customer acquisition Customer retention Customer satisfaction & feedback
		Network	Inter-organizational links
		Competition	Cluster of restaurants Food pricing
	Contextual environment	Technological	Infrastructure
		Socio-cultural	Tourism Social class Lifestyle Cultural diversity
		Economical	Taxation
		Demographical	Population size, growth & density Age & gender distribution Employment & income Education level Household size

IMF: FINANCIAL SUPPORT OR INTERVENTIONISM IN LATIN AMERICA?

Ana Carolina Arboleda Gallo[1]
Universidad Rey Juan Carlos, Calle Tulipán s/n28933 – Móstoles (Madrid) Spain
ac.arboleda@alumnos.urjc.es

ABSTRACT
Despite following the recommendations of the International Monetary Fund (IMF) to the letter, world development indexes still show Latin American countries as well below development expectations. This underdevelopment persists regardless of the social, economic and political efforts carried out along with and at the behest of the IMF. This institution, at the same time, has shifted from its original mandated foal of fighting poverty by fomenting social and economic progress in its least-developed member countries, taking on the role of a moneylending bank, contributing to chaos and further poverty levels in borrowing countries. Past financial crisis come to show that recipes, recommendations and suggestions of the Fund, being of a one-size-fits-all nature, have not worked in most Latin American countries, driving them into deep indebtment and exacerbating their socio-economic issues. Thus, I seek to determine whether IMF recommendations can be catalogued as financial support, or rather economic interventionism. From the answer to that question, it is established whether said recommendations or suggestions constitute intervention in internal affairs of borrowing countries, and consequently, a flagrant violation of principles of non-intervention and self-determination, and even a violation of rights amounting to liability before international bodies.
Keywords: *Latin America, Financial support, Economic crisis, International Law, Development, IMF, Interventionism*

1. INTRODUCTION

The origin, evolution, structure and performance of multilateral financial institutions has been the object of several dissertations. In most works on them, the aim is to show how they have contributed, or still contribute to the development of underdeveloped countries, especially when they're works, speeches, or dissertations written and published directly by said institutions themselves[2]. Others, on the other hand, have turned to hard criticism of the institutions and their performance in relation to the objectives that were the axis of their creation. In that sense, the structure of these institutions has changed from the moment of their creation, not only insofar as their goals, but also their scope, which is now wider by far, both in the International Monetary Fund (IMF) and in the World Bank (WB). Both institutions are now larger and have an interdisciplinary team of employees and collaborators. This paper, however, does not intend to analyse the structure of said institutions, but rather show concisely how these international entities have evolved since their creation, particularly the IMF, and how its decisions or recommendations have impacted the development of studied countries. This analysis of the impact on development is particularly focused in Latin American countries (from now on, LA), with a few countries taken as a sample for practical reasons. To achieve that, I focus, firstly, in describing the economic crises happening in the last two decades, how the economy has been impacted, and consequently, social development in LA countries. I also reference the crisis of the nineties, the way in which IMF decisions or recommendations find their legitimacy in the international community, and whether said decisions are efficacious.

---

[1] Attorney at law from the University of Antioquia, Master of Ibero-American International Relations and doctoral student in the Universidad Rey Juan Carlos (Madrid, Spain). Lecturer at Politécnico Grancolombiano.
[2] In the official website of the IMF it's possible to find announcements, speeches, current news, etc., created by the institution..

This is intended to determine whether their interventions are useful, or if, on the contrary their acting has been in detriment of development and sovereignty, plunging intervened countries in years of poverty and endless indebtment. For that, I analyse the degree of socio-economic development of the previously mentioned countries, showing graphically how they have evolved or devolved, according to the ECLAC[3] (in Spanish, CEPAL), World Bank[4], and IMF. The second part of this work is aimed at finding whether the recommendations issued by the IMF can be categorised as financial support or economic interventionism. The Fund's intervention has been a constant is South American countries, as evidenced by the profound increase of their debt with it. Thirdly and lastly, this text intends to find, from an International Law and international relations perspective, if the recommendations or suggestions of the IMF constitute an intervention in private matters of borrowing countries; and consequently, a flagrant violation of the principles of non-intervention and self-determination of peoples (ONU, 2017). For that, we posit and open for discussion that the workings of the IMF, its actions and results, do not accommodate the fundamental principles of International Law; and therefore, the IMF should be internationally liable and accountable, as any other subject of International Law.

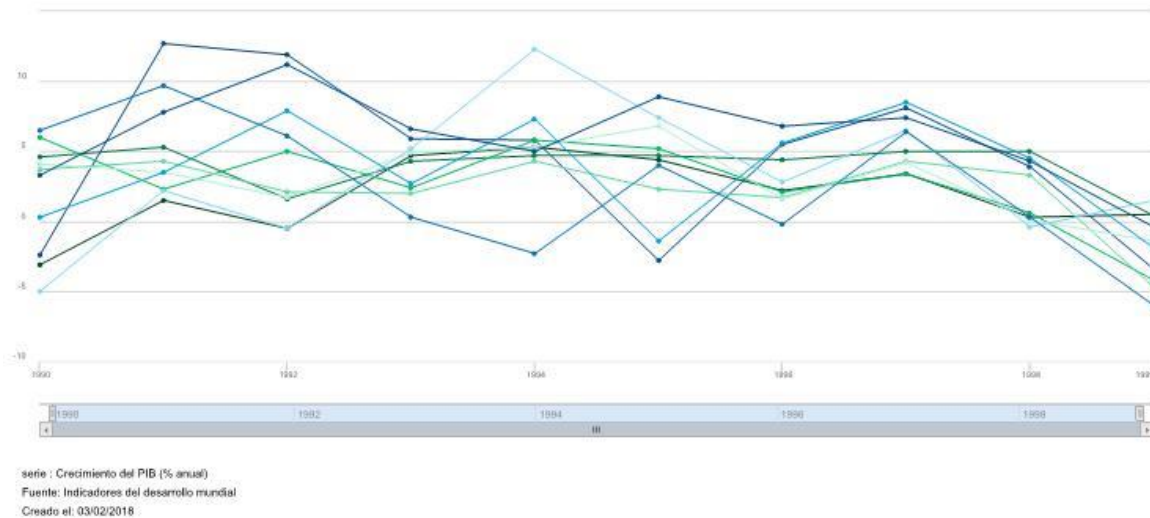## 2. THE CRISES IN LATIN AMERICA

The colonising process is a violent, illegitimate and immoral one. A traditional outlook explains invasion through the technological advantage of the invader; for some, it's a confrontation between innocence and callousness. Today, the state of affairs is not much different from that of colonial days, insofar as there continues to be a confrontation between innocence and callousness: innocence on behalf of LA countries, turning a blind eye to cruel, evident realities, and callousness on behalf of developed countries, which continue to plunder the territories of disadvantaged nations and submitting the governments of these countries to their own designs through economic measures. All of this happens with the acquiescence of international financial institutions, which, in the end, represent the interests of the main economic world powers, in opposition to their constitutive mandate. According to Oddone (2004), several financial crises happen during the last decade of the XX century in countries formerly known as "third world", now known as "emerging countries". They are, to begin with, motivated by the low interest rates in developed countries, caused by recommendation of the Federal Reserve of the U. S., which motivates investors to leave in search of higher profit. From them on, developing countries shed (in theory) said appellation and become "emerging markets", a new financial opportunity. These emerging markets are countries that can sell their debt in financial markets, as long as they apply reforms demanded by investing countries, developed countries. In this respect, it is said that: "During the nineties, the majority of said economies did not suffer from major macroeconomic imbalances, and they showed years of high growth in the Gross Domestic Product (GDP). But, the volatility of financial capitals, political instability and rumours regarding the payment capability on acquired debt, triggered a trust crisis that caused a massive capital outflow, creating successive financial economic crises. This situation caused the collapse of some economies and led the International Monetary Fund (IMF) and several developed countries to have to implement financial "rescue" packages, intended to avoid further negative consequences to the international economic system. " (Oddone, 2004, p.3). In graphic

---

[3] "ECLAC, which is headquartered in Santiago, Chile, is one of the five regional commissions of the United Nations. It was founded with the purpose of contributing to the economic development of Latin America, coordinating actions directed towards this end, and reinforcing economic ties among countries and with other nations of the world. The promotion of the region's social development was later included among its primary objectives.". (CEPAL, 2016)

[4] "With 189 member countries, staff from more than 170 countries, and offices in over 130 locations, the World Bank Group is a unique global partnership: five institutions working for sustainable solutions that reduce poverty and build shared prosperity in developing countries."

1 it is evident how, for the decade discussed, sample countries presented stable behaviour. However, at the end of the decade, the situation changes, and numbers start to become concerning, which means the effected measures have not been effective.

Graphic 1: GDP Growth (Annual %) South American countries

serie : Crecimiento del PIB (% anual)
Fuente: Indicadores del desarrollo mundial
Creado el: 03/02/2018

Source: World development indicators. World Bank.

Some common denominators in the LA financial crises are, firstly, the growing volatility of international financial markets; and secondly, the insufficient macroeconomic coordination amongst the nations with the most influence in world markets and limitations to international institutions. According to Chudnovsky, López and Pupato, (cited in Oddone, 2004), the crises of the nineties follow these patterns:

- Strong dips in GDP, which translate into growing unemployment and level of inequality in income distribution.
- Drastic plunges of the rate of domestic investment.
- Significant currency devaluations which, except for Mexico, did not lead to increases, but rather into decreases in exports.
- Prevalence of high real interest rates.
- Strong depreciation of financial assets.
- Increase of past due loans in bank portfolios.
- High fiscal costs, essentially derived from the rescue of the financial system, which worsen the deterioration of the public treasury, already negatively impacted by the contraction of activity levels.

Graphic 2 shows the behaviour of the annual GDI in %, same timeline and same countries.

Figure following on the next page

Graphic 2: GDI in South American countries in the nineties.

serie : Crecimiento del INB (% anual)
Fuente: Indicadores del desarrollo mundial
Creado el: 03/02/2018
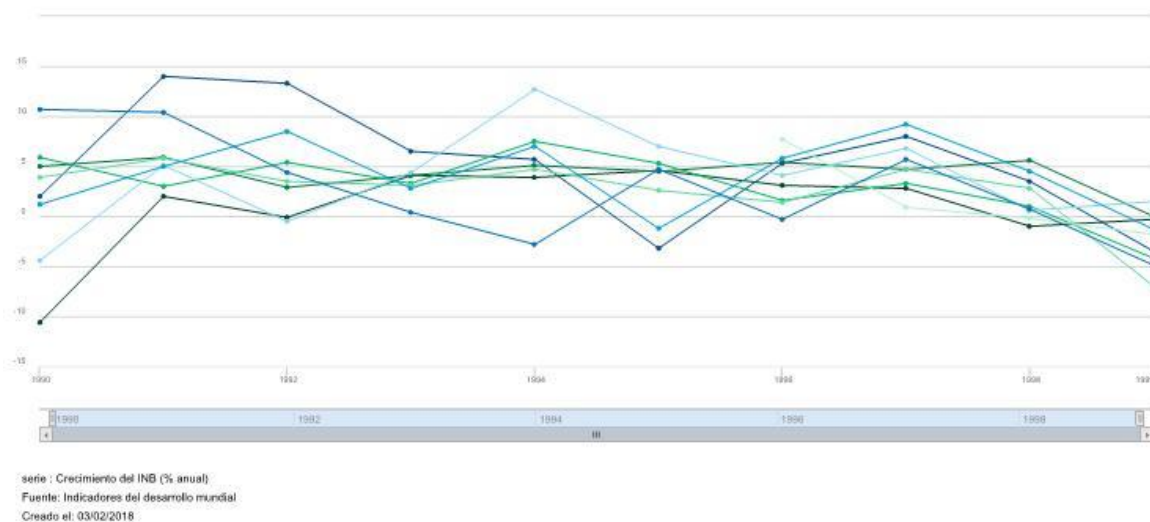
It should be noted that in the nineties, the generalised attitude towards globalisation was completely optimistic. The enforcement of the Washington Consensus[5] decalogue directives began, and in most countries, an era of privatisation of formerly State-owned companies began, in some cases with a quite successful transition, in others not so much. Capital flows in developing countries restarted in 1989 and 1993 because of privatisation, which evidently helped LA leave its lost decade behind[6]. However, in 1994, the first crisis of the decade in emerging countries happens in Mexico, manifesting itself in the cessation of external debt payments. Said event served as a reminder of the vulnerability of emerging economies. After the Mexican crisis, others happened in the same decade, and even though they are off topic – not belonging to LA countries- they do help to show that the financial crisis issue does not target only emerging countries, that it also affects other continents, and that its roots elsewhere might be similar to those described here. Among those other crises mentioned, we have the Asian crisis, and the Russian, Venezuelan and Brazilian in 1998, and lastly, the financial and economic collapse of Argentina in 2001, which led to governmental measures known as the "corralito"[7]. The case of the Argentinian crisis of 2001 is one of the most significant in the topic, especially because it was one of the countries that followed the neoliberal directives ordained by the IMF to the letter, such as deregulation, tariff and financial liberalisation. This is not to say the other countries of the region did not follow the Fund's recommendations –

---

[5] The Washington Consensus is created in 1989 to help LA countries find answers to events of the end of the decade, like the fall of the Berlin Wall and the transition of these economies from a system of "import substitution industrialisation" (ISI) to a "market economy" system. Latin American economies come from an excessively protectionist and regulatory model, so the Consensus aims for a more open, free, and stable model. To achieve that, a set of economic policies to face the external debt crisis in LA is devised. In this context, "Washington" means the intellectual-political-economic complex comprising international entities (WB, IMF), the Congress of the U. S., the Federal Reserve, the high commands of the Administration and the experts (Ortiz, 2002). This terminology was created by Williamson (1990) to codify economic liberalisation policies promoted by international financial institutions (IFI) as part of their structural reforms strategy. However, its usage soon transcended its author's meaning and intent, and became synonymous of "neoliberalism". (Ocampo, 2006).

[6] "Lost decade" refers to the eighties, when Latin America went through a great crisis that took the region into a deep recession, followed by a process of political and economic restructuring, including the renegotiation of debt, privatisation of State-owned companies, trade opening and other neoliberal reforms stemming from the Washington Consensus.

[7] Di Matteo, L. (2001). *El corralito: Así se gestó la mayor estafa de Argentina.* (The corralito: thus came to be the greatest scam in Argentina) Buenos Aires: Penguin Random House Grupo Editorial

what makes the Argentinian case interesting is that it carried the baggage of corruption and indebtment since and agreement celebrated by the then president Bernardino Rivadavia[8] and Baring Brothers Bank, which sought to control finances and transfer resources to metropolises. Since then, the external debt was tied to the businesses of Argentinian presidents. In 1992, Domingo Cavallo[9] and the Secretary of the Treasury of the U. S. negotiate to trade the external debt for the public patrimony at a cost, business that led to the loss of 30 thousand million dollars. Television broadcasting, telephony, tolls, and profits from water, oil and communications are privatised. Everything that is sold is handed debt-free, with the State taking care of dismissals. The plunder was evident is several sectors, such as the airline company Aerolíneas Argentinas, and the railroads sector, which, in the span of a decade, went from 36 thousand kilometres of rails, to only 8 thousand, and from 95 thousand employees to 15 thousand. The water company, taken by an European consortium, ends up in debt for eight times its capital, leaving 800 thousand people without potable water and one million people without sewers, because of unfinished construction work. The successful bidders did not pay their respective fees. (Solanas, 2003) The main feature of the Argentinian crisis is that a massive capital leak began, recession deepened, unemployment rates went up and banks blocked deposits, in what is known as "corralito". This crisis went from being economic in nature, to develop into a social crisis, in which privatisation of the main State-owned companies led most Argentinian people to unspeakable levels of poverty, deprived of social security and public utilities, and unable to improve in the short or mid-term.

Graphic 3: Argentina decade 90
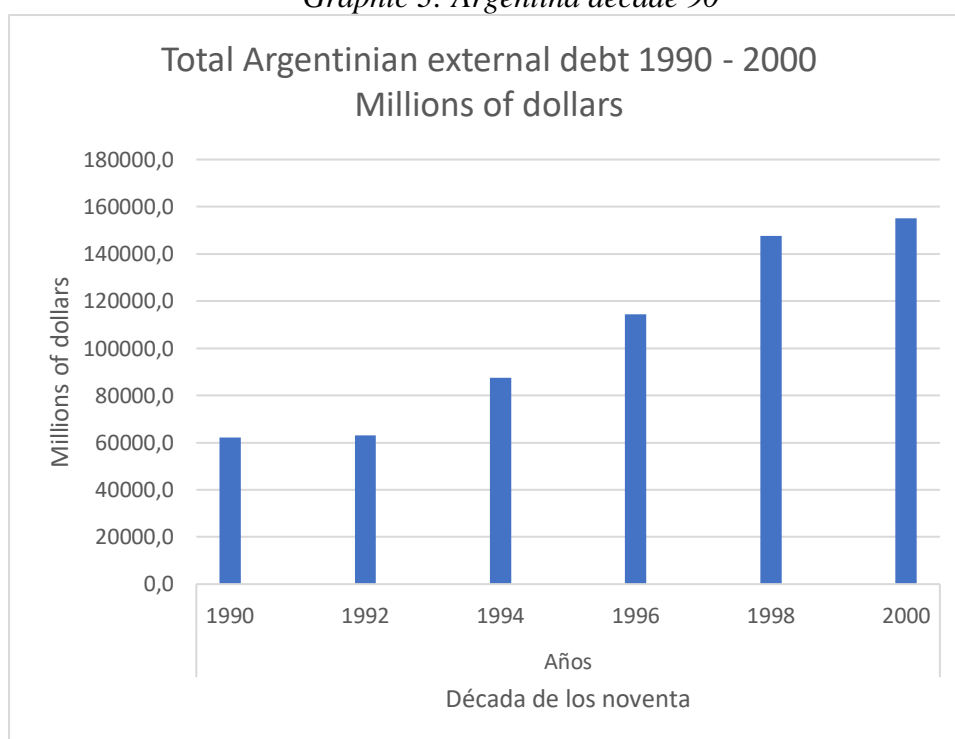
Sources: ENCLAC: Economic Commission for Latin America and the Caribbean – My own estimations based on national sources. Information consulted by Feb. 20th, 2018

---

[8] Bernardino Rivadavia was born in Buenos Aires, May 1780, and died in Cádiz, September 1845. He was the first head of State to work as president of the current Argentina, position he held from February 1826 to Julio de 1827.

[9] Domingo Cavallo was minister for economy during the presidency of Carlos Menem (1991-1996). He executed the law of convertibility: an Argentinian peso equals an American dollar.
https://www.biografiasyvidas.com/biografia/c/cavallo_domingo.htm cited October 2017.

Graphic 4: Total external debt for sample countries

Sources: ENCLAC: Economic Commission for Latin America and the Caribbean – My own estimations based on national sources. Information consulted by Feb. 20ᵗʰ, 2018

2.1. The first crisis of the XXI century

The first (and up until now, the last) crisis of the XXI century hit the main economies. The difference between this one and the previously mentioned ones is that the epicentre of this one was not located in a LA country, but despite that, some LA countries were affected, even though the unemployment numbers are not comparable yet to those of the U. S. and Europe. The effects of the financial and economic crisis beginning in the U. S. and the United Kingdom ended up permeating Latin American and Caribbean economies. The effects of the crisis started being felt in Mexico by the end of 2009, which stems, obviously, from their level of economic dependence of the U. S. It's no secret that from the beginning of the NAFTA (North America Free Trade Agreement) Mexican economy has become strongly dependent on goods exports, with the evident differences between these two economies. Other economically significant countries in the region were affected by the crisis as well, with Chile and Brazil, for example going into recession during the last quarter of 2008 and the first of 2009.
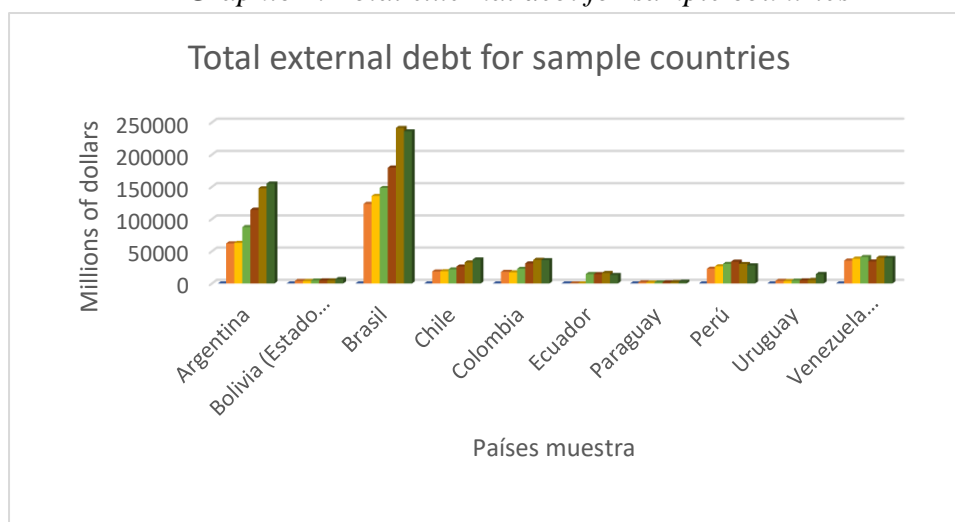
Graphic 5: balance of payments
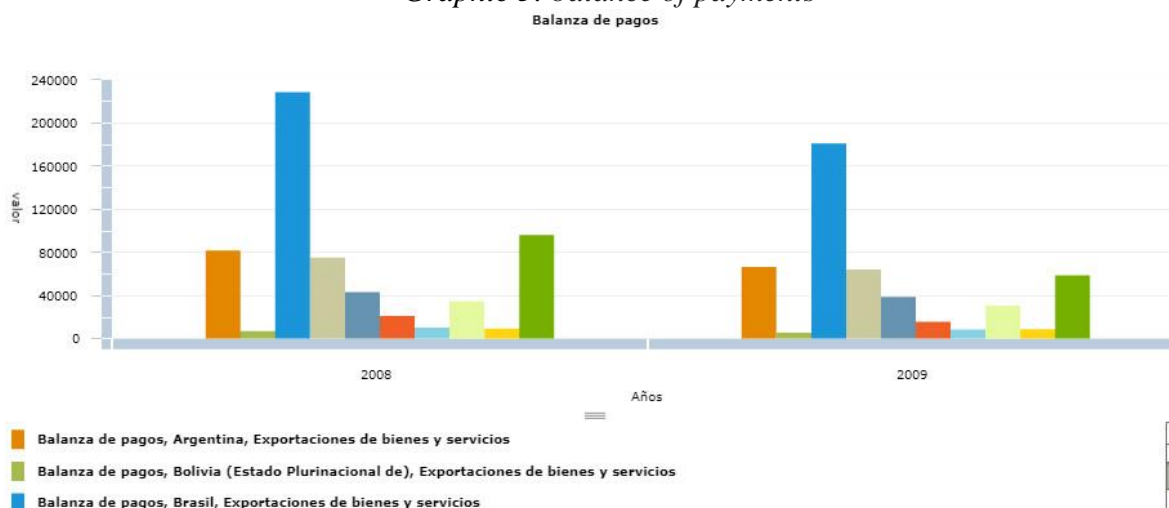
Sources: ENCLAC: Economic Commission for Latin America and the Caribbean – My own estimations based on national sources. Information consulted by Feb. 20ᵗʰ, 2018
http://estadisticas.cepal.org/cepalstat/engine/index.html

262

The hope for a number of countries in the region lies in that a considerable part of the sale of their products or raw materials happens abroad, which helps understand why the fall is less significant than in previous crises. Among its main products, Argentina sells flour and soy beans, corn grain and wheat. Only after them comes the manufactures: cars from 1500 to 3000 cylinders. In Brazil, something similar happens. The first export good are ferrous minerals, petroleum derivatives, meat and poultry. (Correa, Déniz, & Palazuelos, 2008) If we go over the list of other LA countries, the situation is similar. Chile sells abroad copper and its derivatives, then other metals, and finally, chemical wood paste. Colombia's sales to other countries are based on its fuel production (46% of the total), coffee, plastics, fine pearls and flowers. Hope lies in that most of these products have found a niche in a world that has ceased consumption of many manufactured goods, but maintains interest in raw materials, foodstuffs and fuels. (CEPAL, 2011) The exception in the region is Mexico, where the situation is more complicated, according to the ENCLAC report that details its economy: "The slowing down of the American economy, main destination for the Mexican and Caribbean exports, put the main manufacturing industries of the region in a difficult position: cars, electronics, and textiles and clothing. In all three cases, personnel cuts, technical strikes and plant closures were recorded, which, as a whole, contributed to disincentivise Foreign Direct Investment (FDI). Of these industries, the automotive one is the one seemingly facing the most critical situation, and the most radical global restructuring process, even though the effects of this process in the region are still uncertain." (CEPAL, 2011). There are important coincidences and differences between the crisis happening eighty years ago and the present one (CEPAL, 2009). Both originated with the bursting of an active prices, which generated serious solvency issues in the financial system, first in the United States and then in other countries. However, the current crisis has been dealt with quickly and in a relatively coordinated war, with expansive monetary and fiscal measures that amounted to multimillion incentive programs that aim to avoid a severe economic depression. Regarding this last crisis, Krugman, cited by Oddone, ascertains that the crisis of the 1930's was making a "sensational comeback" (Oddone, 2004, p.2). Such a crisis would be reflected, yet again, in the constant threat of recession of the U. S. economy, and the impact that this causes in an international financial market, and particularly the absence of a "financial institution that regulates in times of economic bonanza and helps prevent crises". (Oddone, 2004, p.2) According to the preliminary finding of ENCLAC, "Repercussions in LA and the Caribbean economies were mainly manifest in the real sector, negatively impacting what had until that point been the main motors of regional growth. Exports recorded a strong dip, while the lowered levels of global activity and diminishing of trade negatively impacted prices of basic products and terms of exchange. At the same time, a contraction of remmittances and a diminishing of tourist activity was observed, affecting mostly Mexico, Central America and the Caribbean. Foreign direct investment would have dipped by 37%. In some countries, a negative impact on internal activity was recorded, due to the contraction of private credit, which could not be compensated by more activity from public banking." (CEPAL, 2009)

3. FINANCIAL SUPPORT OR ECONOMIC INTERVENTIONISM?
The Bretton Woods[10] conference sought to create international financial institutions that allowed an environment of credibility, calm and equity, which in turn would drive development of members through the assembly of an important number of countries. Hence that the end of belonging to international financial organisations is not only being eligible for "aid" represented

---

[10] The Bretton Woods system starts in the conference held in Bretton Woods, New Hampshire, U. S., in 1944, where two international institutions of prestige and enduring relevance came to be: the International Bank For Reconstruction And Development (now World Bank) and the International Monetary Fund (IMF). (Hernándes, Arco, & Carmona, 2006, p.39).

in different types of loans that allow for the undertaking of development projects, but also (and very often) counting with a seal of approval that vouches for participation in different international relations the members will hold in other sectors, and even as a requirement to belong to other entities. In that way, for example, belonging to the IMF is a prerequisite to enter the International Bank for Reconstruction and Development. Said participation will also allow entry into de International Development Association (IDA), the International Finance Corporation (IFC) and the Multilateral Investment Guarantee Agency (MIGA). Belonging to the IMF almost guarantees entry to any other organisations, and in the same way, retiring from the IMF means exclusion from them. Decisions taken in these organisations and their recommendations to member States find their source of legitimacy, precisely, in the autonomous and informed decision that each government make when they adhere to them. Then, said governments transfer their subjects the measures and/or recommendations, and they must adopt them. What is complicated in the topic of legitimacy is the inequities in the financial entities, which make decisions depending on the participation that member countries have. Thus, the U. S. is currently the biggest shareholder of the IMF with 16.52% of votes, followed by Japan, with 6.15%, Germany with 5.32%, and the United Kingdom and France with 4.03% each (FMI, 2018). The constitutive agreement determines that the five countries with the biggest share each designate an executive director, the remaining 19 executive directors are appointed by the other States, attempting to maintain a geographical balance. Because of this allotment, decisions are often made taking in consideration ideologically biased economic situations, politically controlled by top contributing countries, that is, the top shareholders. This makes evident that the organization does not act independently or unbiasedly, undoubtedly catering to the convenience of developed countries. Intervention of these organisations has been a constant in LA and the Caribbean, and the result is the profound indebtment of the latter with the former. Organisations intended to provide support to developing countries have turned them into debtors of an unpayable debt, which in turn, works as a yoke that directs debtors in the direction that lenders point to with their demands. It could be argued that being the object of demands is normal for any debtor, however, what in the words of Xavier Bonal is frustrating in LA and the Caribbean is that each loan is conditioned to a series of changes, reflected in "structural adjustment programs" (Bonal, 2002). Said loans would be, as Kalmanovitz says, conditioned to proper conduct exams on behalf of the IMF (Kalmanovitz, 1998, p.536), which leads many countries to measures of extreme interventionism. A prime example is the case of Colombia in 1986, when the Minister for the Public Treasury needs to be replaced, and the Ecuadorian case of 2002, when the IMF decides to block a credit for 240 million dollars after Congress revises the destination of oil income, establishing that 10% of the income is to be destined to healthcare and public education, whereas the original agreement destined at least 80% of the income to paying the IMF and the rest would go to a stabilisation fund in case there were price variations in the oil. (Martone, 2004) In the same sense, there are other examples of IMF intervention that have even affected a country's elections. Other times, among the IMF requirements the has been the abrupt devaluation of currency, without accounting for the real needs of borrowing countries, while at the same time trying to enact policies in the best interests of the ruling economies. In his book "Globalization and Its Discontent", Stiglitz proposes several ideas that are a certain contribution to this work, insofar as the author insists that promises made in several international scenarios in relation to the mitigation of poverty in the last decade of the XX century, have not been upheld. The numbers for poverty have increased, undoubtedly, because despite the efforts from developing countries towards ending it, things like international debt have stood in the way of accomplishing these goals. Solutions proposed by international organisations do not solve these issues, on the contrary, "(..) decisions were often made in line with ideological and political criteria". (Stiglitz, 2009, p.14). Debt contracted by peripheral countries, with economic centre countries (bilateral debt), with multilateral entities like the IMF (multilateral debt), or with big

private banks (private debt) choke, impoverish and run out the options for development. Payments are demanded without extensions and world financial institutions demand structural adjustments that do little else more than expanding a socio-economic model that is not valid for impoverished countries, which privatises public state entities, cuts down the social expenditure and allows the overexploitation of resources, etc. This model is based on the illusion of sustained, unlimited growth, and fails to account for the total amount of external negative factors the whole of economic activities entails.[11] LA countries, along with other places in the work, have played according to Bonal (Bonal, 2002), an important role in the "liberal hegemony". International financial institutions like the WB and the IMF have exerted great pressure on the regions, from the moment of their creation, and particularly visibly until the eighties, but well into the following two decades, when grave economic, social and political crises happen, stemming from interest rate changes, inflation, and growth of external debt. In said junctures, borrowing countries are forced to take the suggestions of the IMF, defined as structural adjustments. These adjustments are the same thing that will allow them to take on new credit, which in turn will go to finance the external debt[12].Structural adjustments are "(…) a set of economic policies, intended to induce a series of important economic transformations (…)". (Lizano, y otros, 1990). Some of these policies could be transformation of the productive structure and institutional transformation, especially relating to diminished State participation in the economy, but particularly regarding the qualitative redefinition of it functions, and lastly, a redefinition of economic relations. These policies, suggested and at times imposed by international financial institutions, do not lead to the development of implementing countries, on the contrary, they have plunged LA countries in economic chaos. This has meant the loss of employment positions because of closing industries and businesses, and the privatisation of public companies in the neoliberal model, which are usually acquired by big transnational north American or European companies. (Bejar, 2002) Structural adjustment policies have in common the certainty that the reduction of State regulation and intervention is the key to success; that is, the liberalisation of the economy is considered as a fundamental means. This intends to bring forth a modernisation of economy; then the latter, now more efficient and competitive, will be able to successfully export to international markets and achieve a greater sustainable economic growth. This in turn, will allow the population to enjoy a better living standard, and the country to aspire reaching "developed" status. A country's development depends not only on its production factors (work, land, industrial capacity and capital), but also, and to a greater degree, on the use made of these factors, that is, significantly increasing production and generating greater goods and services. That is the reason why one of the frequent recommendations in the last few decades has been to privatise State-run companies, with the intention of making public utilities services more efficient, these being, along with the extraction and infrastructure sectors, one of the biggest shares of State-run businesses. Privatisation as an interventionist policy of international financial institutions, adepts and detractors; on one hand, the State, which obtains a higher cash flow as a result, and on the other, the employees, who lose their jobs and families. (Estache & Trujllo, 2004) When an economy has difficulties covering its needs for external financing, there are three sources that can help correct this: official external financing (mainly from multilateral institutions), get private investors to increase (or at least maintain) their investments in the country, and lastly, conduct an adjustment on the domestic economic expenditure, thus reducing the need for financing. In short, the granting of loans for a country by

---

[11] The model followed or imposed by these organisations on developing countries was a model that developed, industrialised countries (Great Britain, the U. S., France, Germany) did not adopt until far after their economy had been consolidated after years of protectionist policies well into the XX century. *«Patada a la escalera: La estrategia de desarrollo en perspectiva histórica», Anthem Press, 2002)*.

[12] Structural adjustment plans are a set of economic, social and financial policies intended to slow down inflation and stabilise the balance of payments. This is done by reducing internal salaries and social expenditure in general.

the IMF happens on the condition of adopting stabilisation and economic adjustment plans designed by IMF experts, which generally entail: reduction of the unbalances in public budget (usually by reducing public expenditure), currency devaluation and privatisation of public companies. If a country is to opt in on the "aid" fered by intrnational financial institutions, it has to follow the policies or conditions the entity proposes, suggests, or demands. These measures find their legitimacy not only in that these entities have been created under international consensus, but also in the acceptance that every State has manifested, either during the signing of their constitutive statute, or by adhesion. It's widely known that LA and Caribbean countries have an external debt that instead of decreasing, is constantly growing. Therefore, they find themselves having to take new loans, which will in turn be destined to paying interests. In the words of Bonal," The growth of external debt, punctuated by the growth of interest types and rising inflation, has left many countries without any other option besides accepting the conditions set by the IMF and WB (Structural Adjustment Loans, Sectoral Adjustment Loans, Structural Adjustment Facilities, Extended Fund Facilities, etc.) to access new credits (necessary, mostly, to finance the debt). These credits are only granted if the receiving countries commit to stabilise their economies and undergo major structural reforms. These measures are a true shock plan for receiving States: stabilisation of the balance of payments, liberalisation of exchange types, free capital circulation, public deficit reduction, fiscal reform, privatisation, deregulation of employment markets, incentive creation for the exports sector, etc. It is, in all, policy packages that intend to include the continent in the global economy through its macroeconomic stabilisation and its opening to the international market."   (Bonal, 2002). This pertains, particularly, to the Washington Consensus, which was referenced before and illustrates the points of view shared by institutions and entities headquartered in Washington (the U. S. Treasury, the IMF, the WB) regarding free market policies.

Graphic 6: Totals of public debt expressed as percentages of GDP
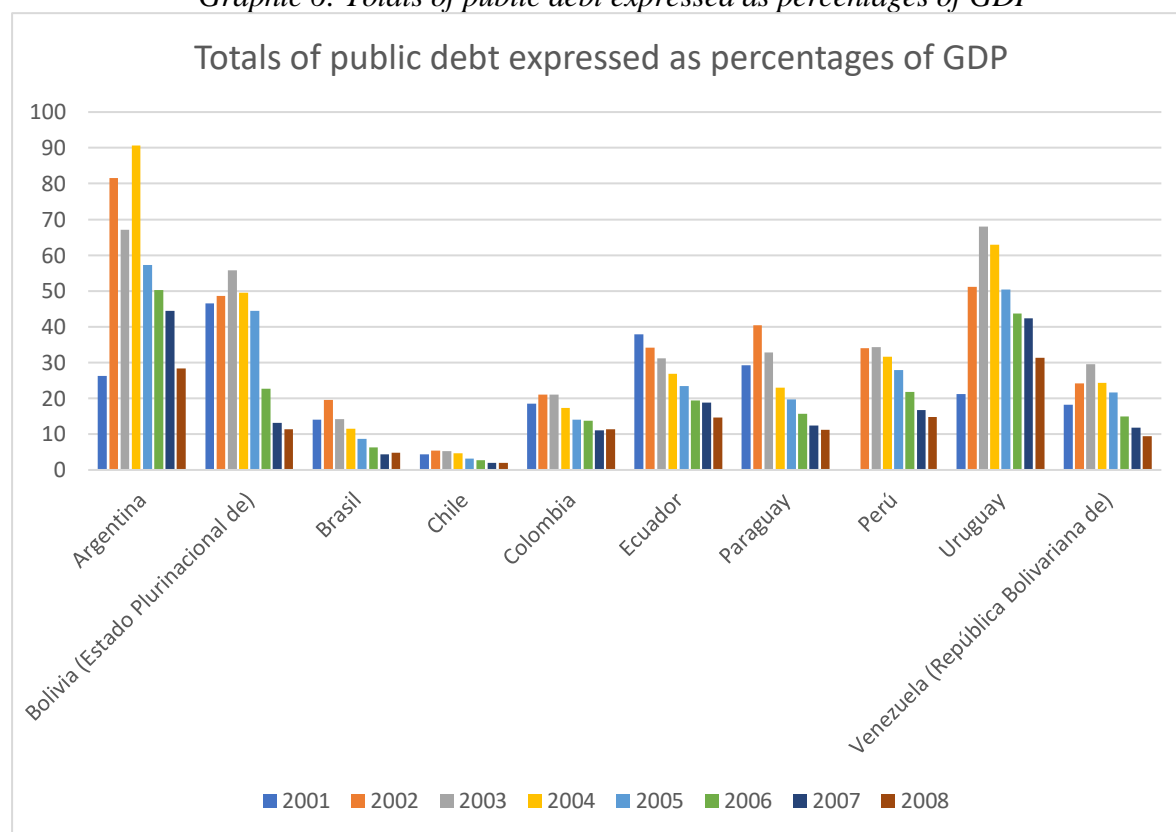
CEPALSTAT | Database and Statistical Publications. Further information: http://websie.eclac.cl/infest/ajax/cepalstat.asp. Mon Mar 13 2017

Graphic 7: Totals of public debt expressed as percentages of GDP
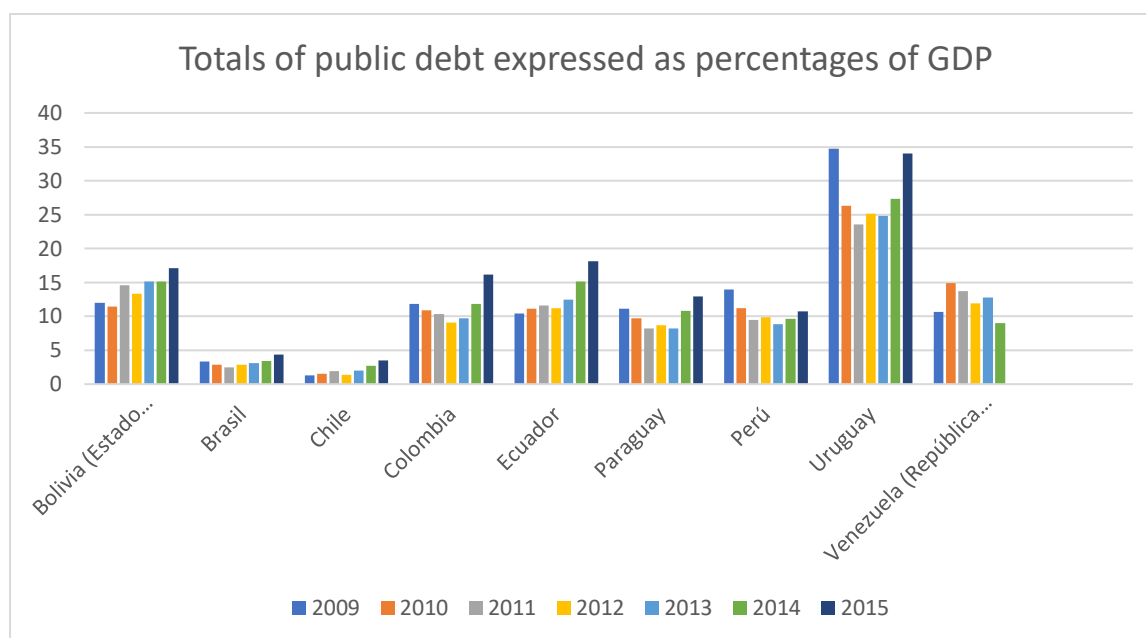
CEPALSTAT | Database and Statistical Publications. Further information: http://websie.eclac.cl/infest/ajax/cepalstat.asp. Mon Mar 13 2017

The legitimacy of IMF/WB decisions or recommendations for developing countries has been questioned in several instances by renowned economists, like Joseph Stiglitz, who in 2011, expressed the IMF and WB required an urgent revision, particularly regarding their legitimacy. To him, these are imperfect institutions, undemocratically governed, being that the rules within them are unfair for developing countries (EFE, 2011). Before that, in 2007, in the annual WB and IMF meeting in Washington, the Intergovernmental Group of Twenty-Four on International Monetary Affairs and Development "reiterate the extreme importance of reaching an agreement over a set of reforms to palliate the legitimacy and democracy deficits in the Bretton Woods institutions, which have undermined their efficacy and public backing" (FMI, 2007). It is evident that to the participating of the gathering, it was of the utmost importance to point the reform to redistribute power more fairly. In that same line of thinking about legitimacy of decisions taken within international organisations such as the WB and IMF, a document prepared by UNESCO ascertains that they "(…) tend to make decisions within a restricted circle, decisions that have sometimes dramatic repercussions, without the affected populations being able to have say themselves on the topic. They grant credits and recommend stabilisation or adjustment policies to countries that are barely represented in their governing bodies, while the influence of the business interest over these organisations remains substantial." Now, when it comes specifically to intervention, the IMF's stabilisation programs aim to make the credit destined to "support an effective program to establish or maintain stability of currency of the member country, in a realistic exchange type" (O'Donnell,2008, p.104). This usually happens through stand by agreements, which dictate that the member country has the possibility to acquire foreign exchange up to a certain limit in a set period, without having to discuss the policies and situations over that time again. This instrument has become a way to condition resources, as it requires the signing of a letter of intent through which the government formulates and commits to executing policies after discussing them with IMF representatives. In this way, the IMF sets the goals and policy procedures the government must reach and enforce; as well as the criteria that has to be followed to prevent the IMF from interrupting the disbursement.

Intervention can reach a point in which it includes consultations formulas in the event of political decisions. Guillen (2005) says about this that "(…) stabilisation policies recommended by the IMF find their justification in the orthodox theory of the balance of payments. According to this focus, to adjust the exterior deficit the devaluation must be met with a policy of reduction of global demand, total opening of external trade and free movement of prices in accordance with the laws of the market." In that line of thought, you could argue that the origin of current issues in these countries is, just as Stiglitz says, originating in IMF-imposed polices. This institution plays, in this respect, a crucial role when it comes to establishing specific number to be executed by the government, which imply not only limitations to public expenditure, but also the growth of external debt, the adjustment of customs tariffs and even salary increases; i.e., actions suggested by the IMF are a gross intervention on internal affairs. At any rate, measures proposed by the IMF are not a right fit for all economies, as the capacity to successfully enforce different economic policies depends on the resources each country has.

4. IMF RESPONSIBILITY IN INTERNATIONAL LAW

Lastly, and from an International Law and international relations perspective, it is possible to see how the IMF has been constituted as an international organisation of intergovernmental nature, created with specific goals and for the achievement of specific economic results, with powers outlined in its constitutive agreement in the United Nations Monetary and Financial Conference in Bretton Woods, in July, 1942,attached to the United Nations along with the World Bank through a cooperation agreement as defined in article 63 of the Charter[13]. As stated before, the IMF has distorted its mandate. It suffices to cast a quick glance at the way the initial mandate has varied, mutating through reforms, taking the institution from and entity for aid and cooperation, to an organization for intervention and oppression, in violation of principles of International Law, such as sovereignty and self-determination of the peoples (ONU, 2017). It may not be wise to generalise, but an expert in Law, International Relations or Economics will see how State sovereignty is affected by decisions and recommendations made by international financial institutions, all of them supposedly in the receiving country's best interests. The particular case in this dissertation is the role played by the IMF, but especially its tendency to apply the same analyses and solutions, disregarding the concrete singular characteristics of a given country, becoming a negative influence for developing countries. International organisations are, according to International Law, international legal persons. International organisations are characterised then by: 1) having a legal personality; 2) having capacity, derived from their legal personality; 3) said capacity being limited or relative; 4) having their goals or functions determined by founding States; 5) being particular and specialised entities; and 6) not being static, but rather evolving according to the circumstances or needs (Granato, 2005). From this it can be inferred that the IMF has rights and obligations, and in such capacity, it can and should be held responsible for the eventual lack of compliance with its obligations, just as any other subject of International Law. According to general rules, an international organisation can be held internationally responsible for the violation of any of its international obligations, derived from a deed carried out by the organization. Because of the above, and in accordance with the first elements of this dissertation, it can be established that the IMF is responsible for commission and omission of facts that are considered unlawful under International Law. This is patent in the results presented, which are by no means exhaustive, in this work, showing that the policies enforced by the IMF lead to the violation of International Law principles, given that the operation of the IMF is incompatible with the fundamental principles of the Charter of the United Nations,

---

[13] Said agreements were approved by the Social and Economic Council on August 16th, 1947, by the governing boards of the IMF and WB on September 16th and 17th, 1947, respectively, and by the General Assembly, on November 15th, 1947, when it came into action. Texts for both agreements are published on STNU, Vol.16, 1948, pages. 325-357.

the foundation of International Law. Said incompatibility is evident in the principles of sovereign equality of States, the principle of non-intervention, the principle of self-determination of the peoples, and the principle of respect of Human Rights. There is, therefore, a violation of third generation rights, as stated in the International Covenant on Economic, Social and Cultural Rights of 1966.

5. FINAL CONSIDERATIONS
The main cause of crises and underdevelopment remains the application of unsustainable or imprudent economic policies, which make the economy vulnerable to external forces. The IMF, as a "specialised organisation" is included under the framework of Chapter IX of the United Nations Charter, which deals with social and economic international cooperation. Because of that, and in accordance with article 55, it is an obligation of the UN to promote "a. higher standards of living, full employment, and conditions of economic and social progress and development; b. solutions of international economic, social, health, and related problems; and international cultural and educational cooperation; and c. universal respect for, and observance of, human rights and fundamental freedoms for all without distinction as to race, sex, language, or religion." Punctuated differences between members of the IMF make it impossible to carry out those goals, given that the measures "imposed" by the IMF deepen inequality, increase unemployment rates, create income instability and the consequent loss of purchasing power for middle and lower classes. There is no doubt that the dips in the economies of the countries in the region are a result of measures taken by governments, which, by following the free market policies of the IMF perpetuate the hegemony of the richest countries in the world.

LITERATURE:
1. ALADI. (20 de octubre de 2017). *www.aladi.org*. Obtenido de http://www.aladi.org/sitioAladi/quienesSomos.html
2. Álvarez, L. F. (2007). *Derecho Internacional Público.* Bogotá: Universidad Pontificia Bolivariana.
3. Bejar, R. C. (2002). *La década dorada: economía e inversiones españolas en América Latina: 1990-2000.* Alcala de Henares: Universidad de Alcala.
4. BM. (27 de 09 de 2017). *www.bancomundial.org*. Obtenido de http://siteresources.worldbank.org/BODINT/Resources/278027-1215526322295/IBRDArticlesofAgreementSpanish.pdf
5. Bonal, X. (2002). Globalización y política educativa: un análisis crítico de la agenda del Banco Mundial para América Latina. *Revista Mexicana de investigción educativa*, 3-35.
6. Cayuela, D., Xercavins, J., Sabater, A., & Cervantes, G. (2005). *Desarrollo Sostenible.* Barcelona: Ediciones Universidad Politecnica de Cataluña.
7. CEPAL. (2009). *Balance prelinar de las Economías de América Latina y el Caribes.* Santiago de Chile: CEPAL.
8. CEPAL. (28 de enero de 2016). *www.cepal.org*. Obtenido de https://www.cepal.org/es/acerca-de-la-cepal
9. Correa, E., Déniz, J., & Palazuelos, A. (2008). *América Latina y Desarrollo económico.* Madrid: Ediciones Akal.
10. Di Matteo, L. (2011). *El corralito: Asi se gestó la mayor estafa de Argentina.* Buenos Aires: Penguin Random House Grupo Editorial.
11. EFE. (11 de abril de 2011). Stiglitz reclama revisión del FMI y BM ante su falta de legitimidad. Montevideo, Montevideo, Uruguay. Retrieved 22 de mayo de 2017
12. Estache, A., & Trujllo, L. (2004). La privatizacíon en América Latina en la década de los años 90: aciertos y errores. *Revista asturiana de economía. RAE N° 31*, 69-91.

13. FMI. (19 de octubre de 2007). *www.imf.org*. Obtenido de https://www.imf.org/es/News/Articles/2015/09/28/04/51/cm101907

14. FMI. (28 de 09 de 2015). *www.imf.org*. Obtenido de http://www.imf.org/en/News/Articles/2015/09/28/04/53/sonew110510b

15. FMI. (20 de 02 de 2018). *www.imf.org*. Obtenido de http://www.imf.org/external/np/sec/memdir/members.aspx

16. 16.Franco, V. L. (2006). *hegemónico, Poder regional y proycto.* Medellín: Instituto Popular de Capacitación.

17. Hernández, J., Arco, E. A., & Carmona, N. (2006). *España y Bretton Woods.* Madrid: Delta Publicaciones.

18. Kalmanovitz, S. (2003). *Economía y Nación una breve historia de Colombia.* Bogotá: Editorial Norma.

19. Lizano, E., Vargas, T. V., Paulino, L., Villasuso, J. M., Esquivel, F., & Montero, A. (1990). *Crisis económico y ajuste estructural.* San José: EUNED.

20. Martone, F. (2004). Sin el fondo ¿quién estará fuera del mundo? : Teoría y práctica de la intervención del FMI en América Latina. *Revista Iconos No. 19*, 124.129.

21. O¨Donnell, G. (2008). *Catacumbas.* Buenos Aires: Prometeo libros.

22. Ocampo, J. A. (2006). Más allá del Consenso de Washington. *Economía UNAM*.

23. Oddone, C. N. (2004). *Mercados emergengente y crisis financiera internacional.*

24. ONU. (18 de 11 de 2017). *www.un.org*. Obtenido de http://www.un.org/es/sc/repertoire/principles.shtml

25. Ortiz, C. H. (2002). *Stiglitz vs. El consenso de Washington*. Recuperado el 12 de 2 de 2018, de http://bibliotecadigital.univalle.edu.co/bitstream/10893/513/1/stiglitz.pdf

26. Ortiz, C. H. (2002). *Stiglitz vs. El consenso de Washington*. Recuperado el 11 de 2 de 2018, de http://bibliotecadigital.univalle.edu.co/bitstream/10893/513/1/stiglitz.pdf

27. Pozo, J. d. (2009). *Historia de América Latina y el Caribe: desde la independencia hasta hoy.* Santiago de Chile: LOM Ediciones.

28. Sánchez, H., Parcero, R. M., Romo, L. E., Becerra, E., & Goytia, K. (2005). *Historia Universal.* Mexico D.F: Pearson Educación.

29. Solanas, F. E. (Dirección). (2003). *Memoria de un saqueo* [Movie].

30. Stiglitz, J. E. (2009). *El malestaar en la globalización* . Madrid: SAntillana Ediciones Generales.

31. UNESCO. (diciembre de 1999). *www.unesco.org*. Obtenido de http://www.unesco.org/new/fileadmin/MULTIMEDIA/HQ/SHS/pdf/170-fulltext170spa.pdf

PRINCIPLES OF CREATION OF INFORMATION SUPPORT SYSTEM FOR INNOVATIVE ECONOMY IN THE REPUBLIC KAZAKHSTAN

Irbulat Utepbergenov
Institute of information and computational technologies, Republic of Kazakhstan
125 Pushkin str., Almaty, 050010 Republic of Kazakhstan
i.utepbergenov@gmail.com

Leonid Bobrov
Novosibirsk State University of Economics and Management, Russia
56 Kamenskaya str., Novosibirsk, 630099 Russia
l.k.bobrov@nsuem.ru

Irina Medyankina
Novosibirsk State University of Economics and Management, Russia
56 Kamenskaya str., Novosibirsk, 630099 Russia
i.p.medyankina@edu.nsuem.ru

ABSTRACT

The development of the mechanisms providing the operation of the unified ICT and analytical environment for the Republic Kazakhstan is considered to be a priority innovation's area. This is particularly important for multidisciplinary innovation projects where close cooperation between ICT and the subject areas of innovation seem to be necessary. The information resources and technologies play a decisive role here in the development of a basic innovation infrastructure, allowing innovators to concentrate on solving the most important tasks without duplicating those tasks that have already been solved by others. The following basic principles are the basis for the creation of the system of information support of innovative economy for the Republic Kazakhstan:

- *the principle of domination of system approach, i.e. the system analysis has to be a methodological basis of creation's process of information infrastructure of innovation's support;*
- *the principle of orientation to real information requirements of the innovative enterprises and clusters;*
- *the principle of specific accounting of separate stages life cycle of innovations and features of information support following from this;*
- *the principle of the introduced experience when it is advisable to use the experience of developed countries to prevent overhead costs;*
- *the principle of reasonable effort minimization, when the most simple and economical models and methods are used to obtain the desired result;*
- *the principle of one-time information processing and its multiple use;*
- *the principle of partnership: the system should take into account the strengths and competitive opportunities of the Republic, not relying solely on its internal potential, and in each situation it is advisable to consider the possibility of creating partnerships and the integration of partner's resources;*
- *the principle of emphasis on the external environment in order to avoid excessive concentration on internal problems;*
- *the principle of modeling of real situations and processes applying the quantitative estimates;*

- *the principle of continuous development of the system to ensure the resistance to the external and internal disturbances.*

Keywords: innovative economy, Kazakhstan, innovation infrastructure, information support system, principles of creation

1. INTRODUCTION
President of the Republic of Kazakhstan N. Nazarbayev (Nazarbayev, 2107, p. 1), on January 31, 2017, his message to the people of Kazakhstan was dedicated to the third modernization of the state and global competitiveness. The President set a goal according to which Kazakhstan should become one of the 30 developed countries of the world by 2050. The most important tasks are the next stage of modernization and the creation of a new model of economic growth that will ensure the country's global competitiveness. The goal is to further develop the innovative economy as a priority area of Kazakhstan's industrial policy, and to strengthen the innovation support infrastructure for the emergence of new industries, taking into account the trends of ICT entry into all areas of human activity.

2. INNOVATIVE DEVELOPMENT AND DIGITAL ECONOMY OF KAZAKHSTAN
The subheadings of the annual global innovation index (GII) published by Cornell University, INSEAD, and WIPO clearly demonstrate the importance of innovation and the attention that should be paid to various aspects of innovation:
- The Human Factor in Innovation (The Global Innovation Index 2014, 2014 p.13);
- Effective Innovation Policies for Development (The Global Innovation Index 2015, 2015, p. 61);
- Winning with Global Innovation (The Global Innovation Index 2016, 2016, p. 69);
- Innovation Feeding the World (The Global Innovation Index 2017, 2017, p. 243).

The annual ratings published in these indices reflect the dynamics of the innovative development the world`s the countries of and the effectiveness (result) of their efforts. The illustration «Movement in the top 10 of the GII», given in The Global Innovation Index 2017 can be an example (see Figure 1).
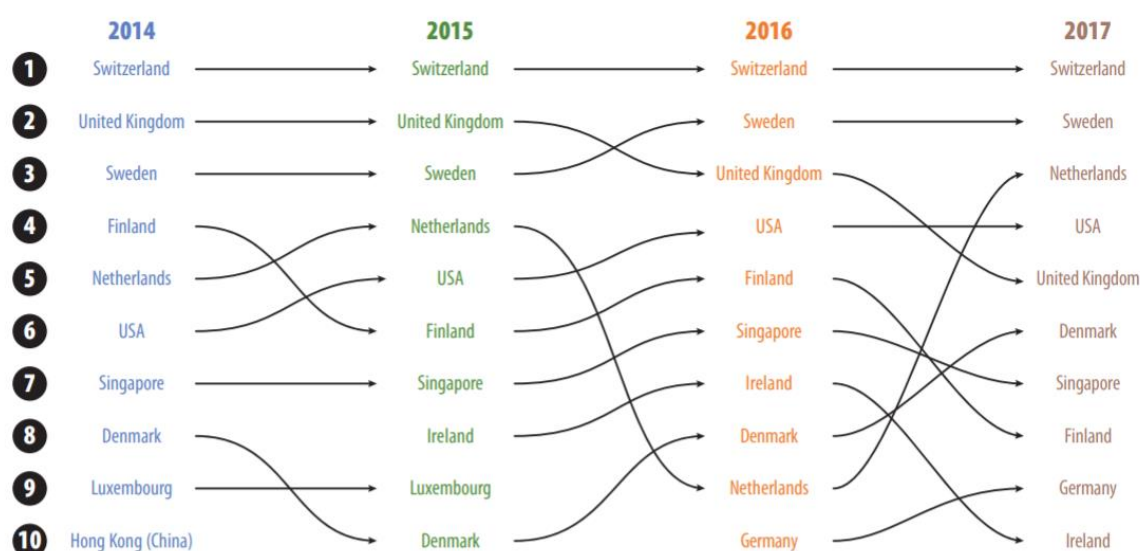

Figure 1: Movement in the top 10 of the GII (2017, 2017's Most Innovative Cities Ranked by Issued PCT Patents)

The position of Kazakhstan in the GII ratings is illustrated in Table 1, where Russia's position is reflected for comparison.

Table 1: Kazakhstan and Russia in the GII Rankings

Country	2014	2015	2016	2017
Kazakhstan	79	82	75	78
Russia	49	48	43	45

In order to intensify innovative development in Kazakhstan, the State Program of Industrial and Innovative Development for 2015-2019 was adopted (State program of industrial-innovative development of the Republic of Kazakhstan for 2015 – 2019, 2014, p.3, 11-16), aimed at solving a wide range of tasks and envisaging, in particular:

- cooperation with the United Nations industrial development organization the International Bank for Reconstruction and Development and other international institutions;
- use of international best practices to strengthen the competitiveness of the national economy;
- development of innovation infrastructure, improvement of business development level, including general quality of business environment and cluster development's stimulation;
- measures to transfer relevant technologies for priority sectors and further qualitative development of their own innovation system;
- providing methodological and information support to all participants of innovation activities and cluster process;
- strengthening of grant financing of scientific activity.

The policy of development of innovative researches should be based on achievements of historically developed scientific schools, available scientific experience and use of accumulated information and knowledge (Message of the President of the Republic of Kazakhstan "Strategy" Kazakhstan-2050 ", 2012, p. 22). One of the ways of diversifying the national economy and reorienting from the raw material to the industrial-service model is the development of digital technologies. On December 12, 2017, by the Decree of the Government of the Republic of Kazakhstan No. 827, the State Program "Digital Kazakhstan" was approved. According to this program, measures should be taken to improve the quality of the existing infrastructure of innovative development, and the key direction of the ICT industry development is to ensure the growth of the share of services in the field of information technology. The program activities are planned to be implemented in five directions, one of which is "Creation of an Innovative Ecosystem". Thus, innovation and digital development are considered in organic unity, which creates favorable prerequisites for the implementation of projects aimed at informational support of innovation activities. One of such projects is the project of the Institute of Information and Computing Technologies, which is carried out by the authors under a grant from the Ministry of Science and Education of the Republic of Kazakhstan in cooperation with Russian and German specialists.

3. ON THE PROJECT FOR INFORMATION SUPPORT OF INNOVATIONS
The purpose of this project is to create an information and consulting environment to support the innovative activity of the Republic of Kazakhstan through information consulting and the provision of metainformation about the world's information resources that meet the challenges of expanded production of innovative products.

Achieving stated goal implies the solution of the following tasks:

- research specificity of information needs of innovators at each stage of the life cycle of innovation from the generation of ideas to the withdrawal of the product from the market;
- formation of a base of metainformation (knowledge base) about existing world information resources relevant to the tasks of each stage of the innovation life cycle (generation of ideas - R&D - production of a pilot batch - market launch - growth - saturation - decline - withdrawal from the market);
- development and commissioning of a specialized information retrieval system designed for situational orientation of innovative organizations in the global information space with the goal of effective information support of innovation activities.

The proposed approaches to the implementation of this project presuppose the generalization and development of Kazakhstan, Russian and European experience in solving the tasks of information support for science and education in relation to innovation as a modern activity with its own specific characteristics. The project, among others, aims to verify, based on the collection and processing of factual data for the Republic of Kazakhstan, the validity of the hypothesis that innovative productivity at the level of the republic and its individual regions depends on the completeness and quality of information support for innovations throughout their life cycle, from the moment of initiation to the withdrawal of an innovative product from the market. Confirmation of the hypothesis will allow substantiating the necessity of reengineering of existing local information support systems and their integration with the created distributed information support system for innovations. The system provides for the creation of a single entry point for navigation in the national and global information space through the provision of metainformation about information resources relevant to the user's task. The entry point is an information portal where metainformation is concentrated both on information resources of Kazakhstan and on resources of other countries. The user has the opportunity to find resources that meet his practical situation, referring to a specialized information retrieval system designed for situational orientation of innovative organizations in the information space, in two ways:

- through a system of classifiers, indicating the stage of the life cycle, the required subject, the task to be solved, etc .;
- through formulating a request in terms of keywords in approximately the same way as he to do when searching the Internet.

Having received, as a result of the search, a list of described in detail information resources and selecting a particular resource (resources), the user can:

- gain access this resource, by clicking on the corresponding hyperlink (if it is an open resource);
- if the resources is to be payable, get acquainted with the conditions of access and through the specified contact details contact the vendor for the conclusion of the contract, or use the intermediary services of the owner of the meta information database.

In some cases, the user may be given the opportunity to study the demo version or to get trial access to some resources. Independent work of innovative enterprises on the organization of information support requires the presence of personnel with the necessary level of information competence. In this regard, within the framework of this project, it is envisaged to develop and implement appropriate training programs. It is expected that these programs will be based on the European Framework of ICT Qualifications and provide for short-term foreign internships.

4. PRINCIPLES

The following principles are the basis for creating a system of information support for the innovative economy of the Republic of Kazakhstan. The principle of dominance of the system approach as a methodological basis of the process of creating an information infrastructure for supporting innovation. This means that the infrastructure must be analyzed, first of all, as a set of interconnected elements that form a complex system with feedback. At the input of the system there are various information resources as the source of the formation of the meta-information base (knowledge base), search results in base make it possible to decide on the need to address a particular resource. At the same time, the coverage of both information resources of the Republic of Kazakhstan (considered as internal resources) and world resources in the form of various types of databases (considered as external resources) is envisaged. Adherence to the principle of orientation to real requirements information of the innovative enterprises and clusters involves identifying needs through questionnaires, interviewing, etc., and maintaining constant feedback from users. The principle of accounting specifics of separate stages life cycle of innovations and features of information support following from this. The meaning lies in the fact that the formation of a meta-information base requires the poly-species coverage of information sources. For example, the bases of scientific and technical and patent information (the R&D stage), the base of business information (output to the market), etc. The principle of the introduced experience. In order to prevent the unproductive expenditure of resources, when creating the system, it is advisable to take into account the positive and negative experience of developed countries both by analyzing relevant publications and by practical familiarization; The principle of reasonable effort minimization, when the most simple and economical models and methods are used to obtain the desired result. The principle of effectiveness. It is necessary to observe a rational correlation between the costs of creating the system and the targeted effects, including the final results, affecting the activities of innovative enterprises. The principle of one-time processing of information and its repeated use – following this principle excludes the re-entry of information and its primary processing, but does not close the possibility of supplementing existing data. The principle of partnership. When creating a system, it is necessary to take into account the strengths and competitive capabilities of the republic, not resting on the use of exclusively its internal potential. In each of the situations, it is advisable to consider the possibilities of creating partnerships and integrating partner resources. The principle of emphasizing of attention on the external environment. Compliance with this principle avoids excessive concentration on internal problems, and also purposefully to monitors the external environment and responds in a timely manner to the emergence of new information resources. The principle of continuous development of the system in order to ensure stability to external and internal disturbances. The introduction of changes to the system should not disrupt its functioning. The implementation of this principle requires deep analytical pre-project work, including a rational grouping of the problems to be solved, so that for each of the groups provide for there are possible development directions for damping possible perturbations. The principle of standardization (unification). When creating a system, standard, unified and standardized elements, design solutions, application packages, complexes, and technologies should be necessary rationally used.

5. CONSLUSION

The above main principles form a methodological platform for the development of a system of information support for innovation activities in the Republic of Kazakhstan. This system is considered as the core of the information infrastructure of innovation support, which provides situational orientation of innovative organizations in the global information space with the goal of effective information support of innovation activities.

LITERATURE:
1. Nazarbayev, N. (2017) Third modernization of Kazakhstan: global competitiveness: the message of the President of the Republic of Kazakhstan N. Nazarbayev to the people of Kazakhstan. January 31, 2017 Republic of Kazakhstan. Retrieved 03.03.2018 from http://www.akorda.kz/ru/addresses/addresses_of_president/poslanie-prezidenta-respubliki-kazahstan-nnazarbaeva-narodu-kazahstana-31-yanvarya-2017-g.
2. The global innovation index 2014 : the human factor in innovation / Soumitra Dutta, Bruno Lanvin, and Sacha Wunsch-Vincent, editors. - Geneva : WIPO , [2014]. - xxv, 400 s. : tab., diagr.
3. The global innovation index 2015 : effective innovation policies for development / Soumitra Dutta, Bruno Lanvin, and Sacha Wunsch-Vincent, editors. - Geneva : WIPO , [2015]. - xxxi, 418 p. : tab., diagr.
4. The global innovation index 2016 : winning with global innovation / Soumitra Dutta, Bruno Lanvin, and Sacha Wunsch-Vincent, editors. - Geneva : WIPO , [2016]. - 422 p.
5. The global innovation index 2017 : innovation Feeding the World / Soumitra Dutta, Bruno Lanvin, and Sacha Wunsch-Vincent, editors. - Geneva : WIPO , [2017]. - 463 p.
6. The State Program of Industrial and Innovative Development of the Republic of Kazakhstan for 2015-2019 (2014) No. 874 of August 1, 2014. Astana. 135 p. Retrieved 03.03.2018 from https://strategy2050.kz/static/files/pr/rus.doc.
7. Message of the President of the Republic of Kazakhstan "Strategy" Kazakhstan-2050 ": a new political course of the state". December 14, 2012. Retrieved 25.02.2018 from https://strategy2050.kz/ru/multilanguage/.

LITERARY TOURISM IN CROATIA

Ivana Vidak
Virovitica College, Croatia
ivana.vidak@vsmti.hr

Irena Bosnic
Virovitica College, Croatia
irena.bosnic@vsmti.hr

ABSTRACT
Visitors are attracted to places associated with literature and writers because people want to know more about writers, their real life, real places and events. In that way they can relate to them. On the other hand, visitors are not only interested in writers and their life, but they also want to see places depicted in literary works. In this context, literary tourism has been developing as a niche of cultural tourism, including both educational elements and entertainment and literary experience, stemming from the fusion of literature, natural and cultural heritage and various cultural and recreational events. Cultural institutions, such as literary museums, memorial museums of writers, literary archives, memorial rooms, memorial centers, cultural centers of a particular writer, and so on, as the main holders of literary tourism offer, must be governed by elements of the literary tourism offer and responsible for the interpretation. The objective of this paper results from the aforementioned facts and it aims at determining the characteristics of literary tourism in Croatia (tourism attraction system, tourism offer and demand) and analyzing the encouraging and restrictive factors of developing this type of tourism in the context of the existing trends on the tourism market. Accounting for the research objective, the theoretical elaboration of the described issues shall include the documentation analysis method, the method of analysis and synthesis, and the comparative method, while the method of analysis web pages' key stakeholders of literary tourism will be applied for the purpose of collecting primary data. Contribution of the paper will be shown as identification of key determinants for future development of literary tourism in Croatia and development potential for the tourism product based on the personality of the writer.
Keywords: culture, cultural institutions, library, literary tourism

1. INTRODUCTION
Literary tourism as a type of cultural or heritage tourism is a phenomenon that has become an important niche in tourism. Institutions that preserve literary heritage and could be the primary holders of cultural offers related to literary tourism are libraries, archives and museums. Terminology of institutions that preserve literary heritage is neither uniform nor consistent. In this sense, there are literary museums, memorials of writers, literary archives, archives of individual writers or scholars (Einstein's archive, Wittgenstein's archive). Different terminology is a consequence of different traditions of museum, library and archives, as well as different approaches to literary legacies in individual countries, either as a subject of presentation, a source of research or a cultural asset in the broadest sense to be protected, processed and presented to use (Kolanović, 2007, p.9). However, this article examines the role of some Croatian authors (writers) in the development of literary tourism. Many areas are being promoted and commoditised increasingly because of their association with famous writers. In this way, literary tourism can be useful in supporting the existing tourism activities, but also can thus be used as a magnet or a catalyst for the development of rural or urban tourism.

2. LITERARY TOURISM: TEORETICAL APPROACH

According to Butler (2000, p.360) literary tourism is "a form of tourism in which the primary motivation for visiting specific locations is related to an interest in literature". This may include visiting past and present homes of authors (living and dead), real and mythical places described in literature, and locations affiliated with characters and events in literatures. Literary tourism scholar Nicola Watson (2009, p.2) describes the literary tourism "as the interconnected practices of visiting and marking sites associated with writers and their work". Also, literary tourism can be defined as "a form of cultural tourism involving travel to places and events associated with writers, writers' works, literary depictions and the writing of creative literature" (Smith, 2012, p.9) or a shorter and perhaps more complete "as travel to places famous for associations with books or authors". (Squire, 1993; referenced by Potočnik Topler, 2016, p. 131). Even though literary tourism is largely based on tangible aspects of writers' lives and works, such as homes, graves and landscapes depicted in their works, event-based manifestations of literature, like stage productions, festivals, book signings and creative writing courses, can be included in the realm of literary tourism (Smith, 2012, p.9). Literary places can be defined in various ways, but principally they acquire meaning from links with writers and the settings of their novels. Such places attract tourists and form part of the landscape of heritage tourism (Herbert, 2001. p.312). Heritage tourists (including literary tourists) are often believed to be a 'better class' of tourist because they tend to spend more money in the local economy of a destination and they are supposedly sensitive to the local culture, customs and traditions of the host community (Smith, 2003, p. 104). Smith (2012, p.11) points out that not only prose, drama and poetry inspire people to become literary tourists, but also biographies and autobiographies. Literary pilgrims or literary tourists are interested in how a place had influenced an author and how a certain author or author's work created a place. Thus literary tourism encompasses many different activities, interests and locations: from sites that are physically associated with the lives of famous writers (houses, graves, statues etc.) to events, tours and performances that commemorate the author and his works (Potočnik Topler, 2016, p. 129). Literary pilgrims in this sense are well educated tourists, versed in the classics and with the cultural capital to appreciate and understand this form of heritage (Herbert, 2001, p. 313). People visit literary places for a variety of reasons (Herbert, 2001, pp.314-315):

- First, they are drawn to places that have connections with the lives of writers;
- Second, tourists may be drawn to literary places that form the settings for novels;
- Third, tourists may be drawn to literary places for some broader and deeper emotion than the specific writer or the story;
- The fourth reason may be less concerned with the literature than with some dramatic event in the writer's life.

Also, Smith (2003, p. 37) for instance highlights a typology of cultural tourists that is largely defined by „typical places" tourists visit and „activities of interest" that tourists engage in. Thus, the „arts tourist" goes to the theatre, attends concerts, festivals and events, visits galleries and literary sites, whilst the „popular cultural tourist" may visit main heritage sites, themed attractions, shopping malls as well as pop concerts and sporting events. Therefore, someone as a cultural tourist may also be an arts tourist, a literary tourist, a dedicated follower of a particular author or of their genealogy in relation to the places visited (Robinson, Novelli, 2005, p. 5). Literary tourism can thus be used as a magnet or a catalyst for the development of rural or urban tourism. Many areas are being promoted and commoditised increasingly because of their association with famous writers (Smith, 2003, p. 25). Nowadays, it is possible to visit a large range of literary tourism sites, ranging from places where "your favourite author was born, grew up, courted, lived or died" over those where "your favourite books were written", to those places 'where they are set' (Watson, 2006, p. 3).

Literary tourism or tourism is associated with 'places celebrated for literary depictions and/or connections with literary figures' (Squire, 1996; referenced by Smith, 2012, p.8). Literary places are no longer accidents of history, sites of a writer's birth or death; they are also social constructions, created, amplified, and promoted to attract visitors (tourists hereafter) (Herbert, 2001, p.313).

3. CONSIDERATION OF THE KEY CHARACTERISTICS OF LITERARY TOURISM IN CROATIA

According to Lekić (s.a., pp.17-19), when we talk about the presentation methodology of a particular writer and poet, it is varied and ranges from presenting works through photography, movies, live shows and performances, and can be divided into three basic types:

1. Presentation of the museum through artifacts or exhibitions from the life and work of a writer or poet;
2. Interpretation through a themed guided tour with tourist guides-animators;
3. Events, festivals and events organized for tourists, inspired by the character and work of a writer or poet.

Then in the interpretation big role has all about any period of the writer's or poet's life (from childhood through creativity to death), with all the members of his family. The special interest is provoked by those places that are part of the literary works or locality or part of the action through which the characters go. Therefore, for the collection of primary data of the key characteristics of literary tourism in Croatia, a review of several selected localities in Croatia dealing with the presentation of a single writer will be given. The research was conducted during the period from February 28th till March 10th 2018. The research pattern scope included 3 intentionally selected localities. These are the House of Šenoa, the Memorial Place of Bela and Miroslav Krleža and Ivana's House of Fairytales. The data was collected by methods of documentation research, while the qualitative analysis of the collected data from the web pages included methods of description and comparison, as well as methods of analysis, synthesis, specialization and generalization. The Šenoa House[1] is synonymous with the cultural heritage created by the Šenoa family members through four generations - during 182 years of their lives in Zagreb. The Šenoa House is also a place where their legacy is located, a family house in Zagreb, Mallinova 27. The family collection of Šenoa was proclaimed a cultural good solution of the Ministry of Culture and is kept in the register of Croatian cultural heritage goods under the number Z-4742. The Šenoa House in Zagreb, Mallinova 27, is immovably cultural property and is registered in the List of Protected Cultural items under the number Z-730. Apart from that, the House of Šenoa is also the name of authoring project of Jasmina Reis, the heiress to the Šenoa family, which covers a number of activities throughout the year, linked to the image and work of August Šenoa and all the rest of Šenoa. The special part of the Šenoa House project is intended for elementary and high school students. The Šenoa House offers cooperation with elementary and high schools. This is update to the idea of August Šenoa to bring the book closer to the young, because they are the ones who will inherit us in preserving our heritage. August Šenoa was pleading for education and this is equal for girls and boys, as he wrote in the story of "Branka", but also in a series of articles published in the magazine "Vienac". Students in the Šenoa House during 2 school hours can hear the story of all members of Šenoa family, with an emphasis on August Šenoa. In the room with furniture, library and items belonging to August Šenoa, the character and work of August Šenoa approach the students and their professors. Within the aforementioned, it is also possible to have teachers lecture lessons in August Šenoa's room or workshops for literary groups, readers, listeners, etc.

---

[1] Kuća Šenoa, https://kuca.senoa.eu/o-kuci-senoa

In addition to visiting the Šenoa House's regular show and workshops related to the Croatian language, teachers of geography and visual arts can hold workshops from these subjects related to the works of Milan and Branko Šenoe (https://kuca.senoa.eu/o-kuci-senoa, March 11, 2018). The most famous, as it is said, from the Šenoa family is August Šenoa (1838-1881), a Croatian prose writer, poet and playwright, and the greatest opus of his creativity are novels, of which the audience read most of the historical themes such as Zlatarovo zlato, Seljacka buna and Kletva, while criticism holds him successful in the paradigm of realism, in the works of Prosjak Luka, Prijan Lovro, Ilijina oporuka and Branka. The entire work makes him the most influential writer of 19th century Croatian literature, deserve for the affirmation of domestic writers in the reading audience (Književni leksikon, 2007.) The Memorial place of Bela and Miroslav Krleža[2] is part of the Zagreb City Museum. Home of Miroslav Krleža includes part of his legacy: stylish furniture, paintings, sculptures, art crafts, photographs, about 4 300 books and magazines, and other inventory of apartment in which Miroslav and his wife Bela Krleža lived from 1952 until death. This space on Gvozd has been the writing place of many of his works in those 30 years. Miroslav Krleža (1893-1981) was a Croatian prose writer, poet, essayist and playwright. In 1952, he founded the Lexicographic Institute, he was a long time in charge for it and today institute still has his name, and has published a great, genre-based and stylishly diverse works, realizing valuable and influential works in poetry and drama as well as in novels, essays and polemics. His most famous works are the cycle of the novel Hrvatski bog Mars, a novel Povratak Filipa Latinovicza, and the Glembajevi cycle is especially appreciated, in which naturalistic techniques form family relations. Krleža is remembered during his mature creation as the most authoritative and influential Croatian writer, who was included in both the conceptual and the general cultural turmoil in former Croatia. (Književni leksikon, 2007). The memorial place also covers the part of his wife Bela who was a teacher but was more remembered as an actress at the Croatia National Theatre. This couple certainly has a rich legacy behind them for their artistic and political action, but as it is visible, the legacy functions only as a museum exhibition, with no content and additional interpretations, manifestations and professional leadership. Ivana's Fairytale House[3] is a unique multimedia and interactive center for visitors that celebrate fairy tales and all-fairy-tale creativity. Acting on the principles of knowledge, creativity and the use of new technologies, it presents the fairytales of the most important Croatian fairy tales person, Ivana Brlić-Mažuranić, as well as the fairy tales of numerous other Croatian and world fairytales writers. Ivana Brlić Mažuranić (1874-1938) was born in Ogulin, wrote poems and stories, and achieved success with the children's novel of the Zgode i nezgode šegrta Hlapića, as well as fairy tales and stories published in the collection of Priče iz davnina, translated to many of the world's languages and because of it she was named Croatian Andersen, and was twice nominated for the Nobel Prize. Because of its simplicity in writing, the ease of storytelling between old wisdom and children's original goodness and innocence, she was and still is a favourite child writer in Croatian literature. Ivana's Fairytale House is located in the ancient Frankopan castle, consists of a multimedia permanent exhibition, a library, a multifunctional workshop space and a souvenir shop. It is also active through its web site with virtual fairy tale and on-line library. Home projects are the base of fairy tales (a unique database of fairy tales, bandwidths and fairytale explorers in Europe) and an interactive map (it is possible to explore themed fairytale routes in the form of stylized characters from Ivana's fairy tales, that meet the Ogulin's magic and fairy tales by interpreting different content such as natural and cultural attractions, in a way perceived by fairytales). It develops its publishing activity, and throughout the year organizes creative educational programs in the area

---

[2] Memorijalni prostor Bele i Miroslava Krleže, http://hvm.mdc.hr/muzej-grada-zagreba---memorijalni-prostor-bele-i-miroslava-krleze,762:ZAG-4/hr/info/
[3] Ivanina kuća bajke, http://www.ivaninakucabajke.hr/hr/

of narration, literary and visual expression, film, present and applied art and design, intended for children and adults.

4. CONSLUSION

Literally tourism, as a type of cultural or heritage tourism is related to culture, as something that is everyday need of people. When we speak about literally tourism in its basic definition is that in such sort of tourism visitors are attracted to places associated with literature and writers because people want to know more about writers, their real life, real places and events. In that way they can relate to them. On the other hand, visitors are not interested just in writers and their life, they also want to see places described in literary works. History of literature is rich, and almost every country has a great writers or poets that made influence. Some countries, especially the United Kingdom (places in memory of William Shakespeare, Agatha Christie, Charles Dickens, sisters Bronte etc.) and France (Victor Hugo Mansion) have recognized the role of literature in tourism, whether it's focused on the famous names of writers or their works, these countries are good in literally tourism and during years have a lot of visitors. In Croatia, most often, as far as the relationship between literacy and tourism is concerned, libraries often play big role in presenting writers and their literary works. Accept libraries, there are museums and archives: museums are more openly accessible than archives, most often because of basic preservation for archive collections (special conditions). In conclusion, through the analysis of three places dedicated to writers in Croatia, it has been established that there is a quality material for the offer, only this material is rarely organized and presented to the visitors. The potential of the book treasury as a tourist attraction is best exploited at Ivana's Fairytale House, in memory of famous Croatian writer Ivana Brlić Mažuranić, as a unique multimedia and interactive center for visitors who celebrate fairy tales and all-fairy-tale creativity. Other two, the Šenoa House and the Memorial Place of Bela and Miroslav Krleža have a lot of opportunities, but need more organization and development (especially working time, qualified personnel, online activities, web site, mobile application and so on) to be attractive to heritage tourist (especially literary tourist).

LITERATURE:

1. Butler, R. (2000). Literary tourism. In J. Jafari, *Encyclopedia of Tourism* (p.360). London: Routledge.
2. Herbert, D. (2001). Literary places, tourism and the heritage experience. *Annals of Tourism Research*, 28(2), 312–333.
3. *Ivanina kuća bajke.* Retrieved 10.03.2018. from http://www.ivaninakucabajke.hr/hr/
4. Kolanović, J. (2007). Spomen-muzeji književnika i književni arhivi. *Muzeologija*, No.43/44, december 2007, p. 9-25.
5. *Kuća Šenoa.* Retrieved 10.03.2018. from https://kuca.senoa.eu/o-kuci-senoa
6. Lekić, R. (s.a.). Povratak pjesnika, Petar Preradović vraća se u zavičaj. Pitomača: Turistička zajednica Općine Pitomača.
7. *Muzej grada Zagreba – memorijalni prostr Bele I Miroslava Krleže*. Retrieved 10.03.2018. from http://hvm.mdc.hr/muzej-grada-zagreba---memorijalni-prostor-bele-i-miroslava-krleze,762:ZAG-4/hr/info/
8. Potočnik Topler, J. (2016): Literary tourism in Slovenia: the case of the Prežihov Voranc cottage. *Informatol,* 49(3-4), 129-137.
9. Robinson M. and Novelli, M. (2005). Niche tourism: an introduction. In M. Novelli, *Niche Tourism, contemporary issues, trends and cases* (1-11). Burlington: Elsevier Butterworth - Heinemann.

10. Smith, Y. (2012). *Literary Tourism as a Developing Genre: South Africa's Potential* (dissertation). Pretoria: University of Pretoria.
11. Smith, M. K. (2003). *Issues in Cultural Tourism Studies*. London: Routledge
12. Solar, M. (2007). *Književni leksikon.*Zagreb: Matica hrvatska
13. Watson, N. J. (2009). Introduction. In N. J. Watson, *Literary Tourism and Nineteenth-Century Culture* (p. 1-12). Basingstoke: Palgrave Macmillan.

DEMOGRAPHIC AGEING AND LABOUR MARKET SHORTAGES - CASE OF ROMANIA

Lucian Adrian Sala
University of Craiova, Doctoral School of Economic Sciences, Romania
sala_lucian@yahoo.com

ABSTRACT

Demographic ageing is a modern phenomenon that is shaping the demographic landscape in most European Union Member States, with different levels of intensity. This also is the case of Romania where a reversal in the population structure is currently taking place. These changes are causing the population structure to shift in size with an increasing elderly cohort compared to working-age individuals between the ages of 15 and 65 years. The inferred assumption is that this change may have detrimental effects on the labour market by creating shortages of labour resources. The paper analyses the relationship between the labour market requirements for workers and the demographic ageing process as it evolves over time causing a shift in the structure of Romania's population. This paper also looks at the main consequences that might arise in the near future both social and economic dimensions. The methodological research consists of statistical methods, utilizing datasets of official statistics. The expected results are that changes in the demographic structure brought by an ageing population will cause a decrease in the supply of workers, causing shortages over time.
Keywords: *ARMA Model, Demographic ageing, Fertility rates, Job vacancy rate, Labour market shortages, Occupation rate*

1. INTRODUCTION

Demographic ageing is seen by many specialists as a consequence of paradigm shifts that result from the choices of individuals to have fewer children, to have them later on in life, to migrate to other countries and for women to take a more active role in the labour force. In past decades, the concept of population ageing was not as mainstream as it is in modern times, where due to a series of factors it is accelerating. Demographic ageing is caused by low fertility rates and higher life expectancy. Although in the past the extension of life was seen as a noble goal and still it is, a lot of changes at many levels arose. This phenomenon should not be a problem if fertility rates are high, but when this process is accompanied by a steady decline in fertility rates, it will cause strain on the existing macroeconomic ecosystem. Romania also is joining to this scenario, it's declining fertility rates coupled with the ageing workforce are causing pressure on the countries labour resources. Romania has seen its labour force steadily decline beginning in the early '90, when through migration, a significant portion of its labour force choose to migrate to neighbouring countries for higher salaries and better working conditions. Thus, Romania became an exporter of labour. The situation is worsened to a great extent by the fact that fertility rates have dropped significantly. Therefore the numbers of future workers will decline. To add to these challenges, a significant portion of Romania's workforce will retire by the end of this decade. This paper analyses the causes that are responsible for the current labour market shifts, taking a look at how Romania's population has transformed, so that a clear picture of future trends can be drawn. The primary focus, however, is the increasing lack of workers as seen through labour market occupation and labour market vacancies at the regional level. At the national level, the ARMA model is used to forecast working vacancy rates, hoping to solidify a clearer picture of future expectations. The expected results are that Romania's workforce will continue to shrink, this will affect economic growth which will lead to other notable consequences.

There is no clear path to solve this problem as of yet, and little is being done by the government to slow down the emigration flows, but there are signs that it is reversing to some degree.

2. THEORETICAL FRAMEWORK

Some of the biggest points presented in the literature on demography are the ageing and decline of the population. Eurostat (2000) defines population ageing as "the increase in the median age of the population in a region, as a result of decreasing fertility rates and a concomitant rise in life expectancy". The median age of the population is the age which separates the population into two equal numerical groups. This indicator will increase at different rates in EU Member States. As a consequence, structural changes will become more obvious, causing imbalances within the labour market when referring to the dependency rate. This trend is common within all member states of the EU as well as in Romania, which faces these challenges with varying degrees of intensity from one state to another. Demographic changes pose challenges, in part due to the noticeable decline in population growth over other geographic areas, but also due to advanced ageing and falling labour resources (Börsch-Supan, 2013). After the Second World War, Romania, as well as many Western nations, registered an increase in birth rates. The explosion of new-borns has become known as the "baby boomer" generation that swelled the labour force causing an unprecedented rise in production and wealth. These generations are quickly approaching the retirement age, leaving behind a need for substitution by younger generations. This process is a difficult one since replacing them will require a great number of skilled, better-trained individuals. Population ageing cannot be considered as a process that is associated only with older generations. The reality is that population ageing affects people of all ages because it generates significant friction between young and old groups, as a consequence of changes in the family unit. Population ageing is often seen as a burden, which produces harmful effects on the economy, but this view is to a large extent exaggerated, as an elderly population also brings a number of benefits in terms of services to the community and to the family unit, that are often overlooked. Population ageing will have different effects in particular on the economy, effects that are closely observed by governments so that better schemes and policies are adopted to address imbalances. Recently, most publications reveal that the segment of the population actively engaged in the labour market has become smaller than that of pensioners. As a result of these changes that are taking place, most countries are becoming "old" (Bell and Rutherford, 2013). Young people are in the process of becoming a numerical minority that coexists with several older generations. In such a complex environment intergenerational and gender, interdependencies should be handled in a sensitive manner mainly through social policies. As a whole, population ageing requires a sophisticated political, economic, labour market related and social approach. The private and public sectors must not only guarantee the provision of adequate services to the elderly, but they must also be economically viable, taking into account the complexity of the interactions between demography and society (Radu and Radu, 2014). Romania's population for the last 27 years has gradually decreased in size, without any noticeable signs of a reversal, these changes have shaped to a remarkable degree the country's demographic landscape (Cristea and Mitrică, 2016). The main factors that are responsible for demographic ageing and the decline in population numbers are: negatives levels of net external migration, surpassing the natural growth of the population; the reduction in birth rates.

2.1. The effects of migration on romania's population

The migration process has become a complex phenomenon, causing a lot of controversy in host countries and countries of origin, especially within the EU. Bauer and Zimmermann (2002) noted in regards to migration that temporary migration of workers, especially high-skilled workers, continuously gains in relevance, while traditional migration networks appear to lose

in importance. This assumption is one of great importance since it tends to cause over the long run a shortage of workers in the country of origin. Nicolae (2007) points out that if labour resources are continuously attracted to more developed nations within the EU, the prospects of economic growth in Romania will be affected. Silasi and Simina (2008) conclude that, on a shorter time scale, workforce migration will have positive effects on Romania's economic growth prospects due to the decreased social expenditures and the inconsistencies within the labour market. Constantin et al. (2004) believe that a balance can be achieved between the flows of workers that choose to migrate and those that prefer to work in Romania. Thus the labour market will have an optimum supply of workers. This claim holds true to some extent with the help of supporting government policies and increasing wages, which will decrease the likelihood of young workers choosing to migrate. After 1989, the changes in the structure and size of Romania's population accelerated as a result of the economic and social transitions, these changes helped to a large extent in shaping the current population structure. Between 1990 and 1992, a significant part of Romania's population began migrating to other countries within the EU, causing an imbalance and subsequently decrease in population numbers. When comparing net migration and statistical adjustment (Figure 1) with the decline in Romania's population, we can observe a strong correlation between population outflows through migration and the decline in population numbers. After 1989, when Romania's had open borders again for all of its citizens, a substantial increase in migration trends began, culminating in 1991 with -17.60 per 1000 persons for a total population of 23.19 Million. Between 1992 and 2000, the level of outflow fluctuated between -1.20 per 1000 persons in 1992, and -0.20 per 1000 in 2000 with the population moving from 22.81 Million in 1992 to 22.46 Million in 2000. Two more significant outflows happened in 2001 with -25.20 per 1000 persons at a population level of 22.43 Million, and in 2007 at -21.90 per 1000 persons at a population level of 21.13 Million. Between 1989 and 2016, migration was negative for all years causing a labour force drain and a decline in population numbers, reaching 19.76 Million in 2016.
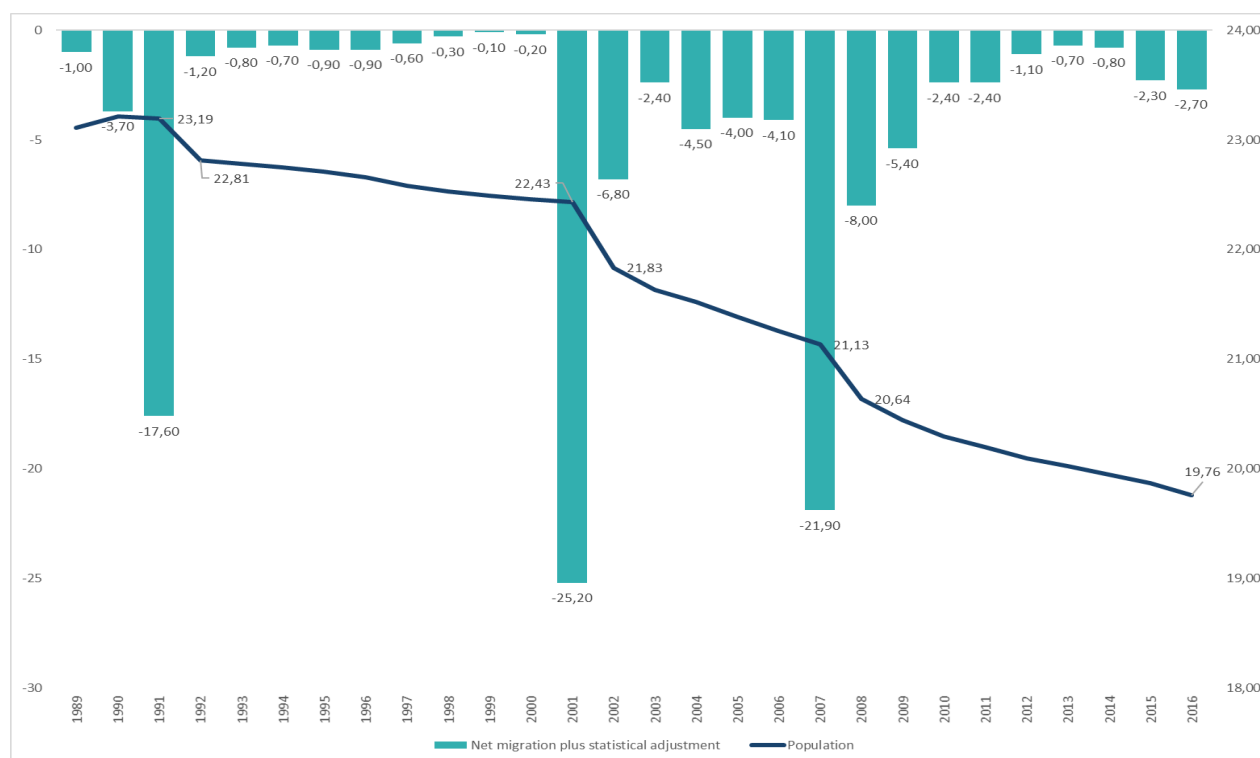
Figure 1: Net migration and statistical adjustment effects on Romania's population
Source: Own creation based on Eurostat data

2.2. Birth rate changes

Easterlin (1968) summarised that a systematic shift in preferences to having children or not arises from the fact that each succeeding generation, under the scenario of steady economic growth, will face higher parental needs (Easterlin, 1968). When a large group of the population encounters unfavorable labor market conditions that reduce young people's possibilities to achieve their aspirations, they will tend to make a series of adjustments in order to bridge the gap between reality and aspiration, including increasing women's labor force participation, and delaying marriage and reproduction (Easterlin, 1968). As younger cohorts of women will anticipate higher levels of participation in the workforce, they will tend to continue their studies in an increasing proportion. Thus, the impulses motivating the decisions to participate in the workforce among women, which have the effect of reducing the rates of marriage and fertility, are based on the desire to improve the relative economic status and to achieve material aspirations to the detriment of income and fertility (Easterlin, 1968). The aversion of younger generations to have children may also come as a result of the high costs associated with this process. Becker argued that younger generations are more "selfish" and thus much more tempted to postpone or give up the idea of having children in favour of meeting personal needs (Becker, 1991). Within the developed countries, an increasing number of women actively participate in the labor market greatly reduce the fertility rate, which tends to decrease with age, due to biological, social and economic factors, and by setting new paradigms that lead to detrimental decisions (Börsch-Supan, 2013). The same argument brought by Alders and Broer (2004) is that the current demographic shift faced by developed countries is no longer just an exogenous shock. The authors point out that an increase in female capital in the labour market has led to a decrease in the fertility rate (Alders and Broer, 2004). Declining fertility rates lead to social structures with many older workers active in the labour market and fewer children to take their place (Navaneetham and Dharmlingam, 2012; Alam and Mitra, 2012). With decreasing fertility rates, a significant shrinking of the labour force both in the near future and in the distant future will occur. These changes outline the dramatic shifts in the composition of European populations, causing the structure of families and households to be transformed, also setting the stage for future developments and changes within the labour market and economic growth (Hock and Weil, 2012).
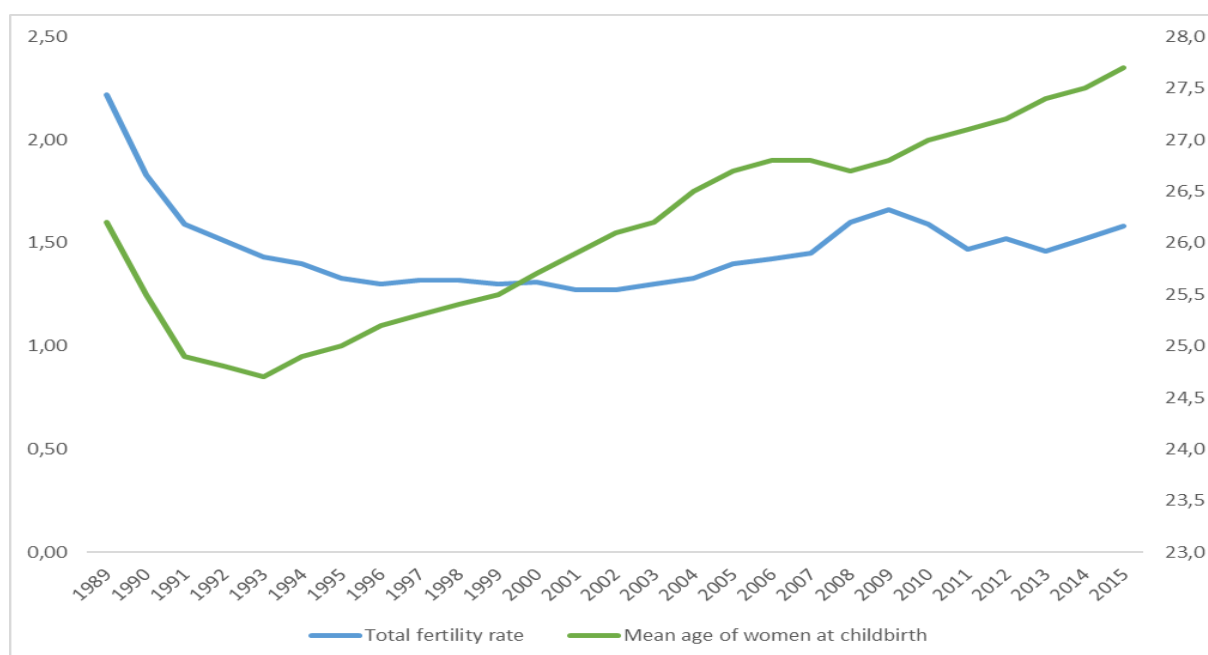
Figure 2: Total fertility rate and mean age at childbirth
Source: Own creation based on Eurostat data

Between 1989 and 2015, the total fertility rate (Figure 2) dropped below the replacement level of 2.50 children per woman. In 1989, the total fertility rate was at 2.22 children per woman, in 1991 it had fallen to 1.59 children per woman, and in 2003 it reached an all-time low of 1.27 children per woman. After this period, it began to rise slowly to 1.66 children per woman in 2009, with small fluctuations in the years that followed. The total fertility rate was measured at 1.58 children per woman in 2015. The mean age at childbirth (Figure 2) dropped from 26.2 years in 1990 to 24.7 years in 1993, and then it began to slowly climb to 27.7 in 2015. This aspect is important since it establishes that women chose to sacrifice having children to a later stage in life in order to continue their education and to subsequently join the labour force.

3. MATERIALS AND METHODS

Romania's population has seen a remarkable transformation in a relatively short period of time. Changes in the size and structure began to happen in the early '90 and accelerated into the following decades. The datasets used for analysis are time series data sets on population numbers, migration, fertility rates and the mean age of women at childbirth. The data has been collected from Eurostat over a period from 1960 to 2016. The time series data on population occupation rates and vacancy rates between 1990 and 2017 have been gathered from the National Institute of Statistics of Romania. Time series are data sets where information is arranged in accordance with a specific equidistant time sequence. This analysis makes use of sequentially arranged information to make sense of data points changes over time. Forecasting is as much science as it is art, over the years a series of theories and methods of time series forecast have emerged (exponential smoothing, fitting trend, seasonal adjustment), these methods proved to be accurate when performing long-term trend forecasts. For short-term forecasts, the ARMA model is a more viable option since it computes for the influence of past values, current values and errors (Whittle, 1951). The model takes into account the dependence on the time series but also the influences of random fluctuations, this makes it ideal for short-term forecasts with a high degree of reliability. The Autoregressive Moving Average Model (ARMA model) comprises two components, the autoregressive (AR) and the moving average (MA). The AR(p) (autoregressive of order p) model can be computed with the equation (1).

$$x\_t = c + \emptyset_1 x_{t-1} + \emptyset_2 x_{t-2} + \ldots + \emptyset_p x_{t-p} + \epsilon_{t,} \tag{1}$$

where:
x_t − time series of data;
c − constant;
$\emptyset_1 \ldots \emptyset_p$ − parameters of the model;
ϵ_t − white noise.

The MA(q) (moving average of order q) can be computed using the equation (2).

$$x_t = \mu + \epsilon_t + \theta_1 \epsilon_{t-1} + \ldots + \theta_q \epsilon_{t-q}, \tag{2}$$

where:
μ - mean of the time series;
x_t − time series of data;
$\theta_1 \ldots \theta_q$ − parameters of the model;
ϵ_t − white noise.

The model is usually presented as an ARMA(p,q) model where p represents the autoregressive process and q the moving average. The ARMA(p,q) model can be expressed by the equation (3).

$$x_t = c + \emptyset_1 x_{t-1} + \emptyset_2 x_{t-2} + \ldots + \emptyset_n x_{t-n} + \epsilon_t + \theta_1 \epsilon_{t-1} + \ldots + \theta_1 \epsilon_{t-1} \tag{3}$$

4. RESULTS AND DISCUSSIONS

To be able to understand better how the labour market evolved both under the influence of demographic ageing, and the influence of a declining population, we analyse the occupation rate at a regional level. Romania comprises eight regions, which have different levels of development, resources, economic growth and population numbers. After 1990, a high level of population outflows to neighbouring more developed countries began with different levels of intensity. This mass migration process will cause over the long run a decline in occupancy rates and a rise in jobs vacancy rates. As can be observed in Figure 3, Romania's labour resource occupation rate began to decline at a fast pace, from a high ranging from 80% to 85% for all regions. The Bucharest-Ilfov region was the one that declined the fastest, reaching a low of 50.7% occupation rate of the labour resources in 1999, after that, an increase due to higher income and internal workforce migration from rural areas, which caused a steady increase, reaching 84.8% in 2008. After 2008, a small decreasing to 71.2% in 2014 occurred, followed by a rise to a peak of 88% in 2016. The Centre, North-West, West, North-East, South-East, South-Muntenia, and South-West Oltenia regions moved for the most part in a similar pattern with small differences between them in the period from 1990 to 2013. The trend was one of decline with absolute lows for the Centre region of 60% in 2010, the North-West region reached a low of 64.9% in 2010, the West region in 2005 with 56.5%, the North-East region reached an all-time low of 49.6% in 2013, the South-East region reached a low of 53% in 2011, the South-Muntenia region reached a low of 55.3% in 2010, and the South-West Oltenia region reached a low of 57.5% in 2010. Between 2014 and 2015, there was an interregional balancing brought by the internal migration and a mild rise in economic growth. In 2016 Bucharest-Ilfov was the region with the highest occupation rate, followed by the North-West with 70.4% occupation rate, the Centre region with 69.5% occupation rate, South-West Oltenia with 60.9% occupation rate, South-East with 61.1% occupation rate, South-Muntenia with 58.2% occupation rate, the West region with 57.2%, and the North-East region with 55.5% occupation rate.

Figure following on the next page
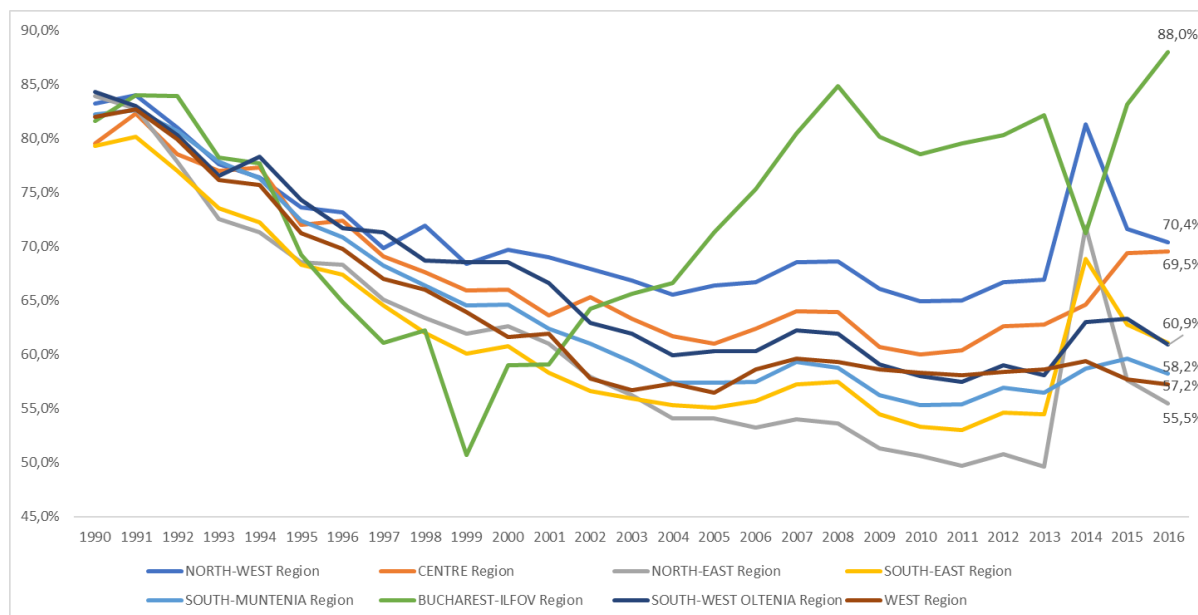
Figure 3: Regional labour resources occupation rate
Source: Own creation based on National Institute of Statistics data

The regional job vacancy rate (Figure 4), in Romania, suffered a significant decline from 2008 to 2009 as a result of the economic growth that took place after the recession. The working vacancy rate is a useful metric to follow because it shows the level to which current market needs are covered by actual labour resources.
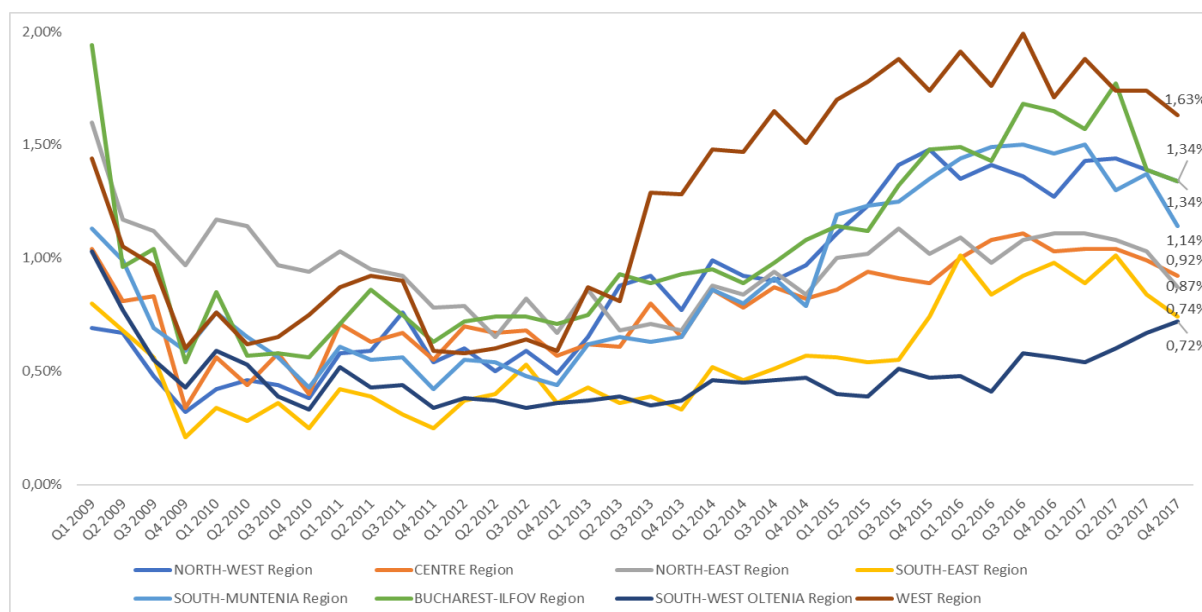
Figure 4: Regional working vacancy rate
Source: Own creation based on National Institute of Statistics data

After 2012, a slow but steady rise in the working vacancy rate can be observed, by its self it is not a concerning factor, but when coupled with a decreasing occupation rate and with an ageing and declining population it underlines the lack of labour to cover the existing requests. In the last quarter of 2017, a mild correction can be observed, but the overall trend as can be seen in Figure 5 is one of increase.

The working vacancy rates for the West region were at 1.63% for the North-West and for the Bucharest-Ilfov regions at 1.34%, for the South-Muntenia Region at 1.14%, for the Centre region at 0.92%, for the North-East region at 0.87%, for the South-East region at 0.74%, and for the South-West Oltenia region at 0.72% vacancy rate.
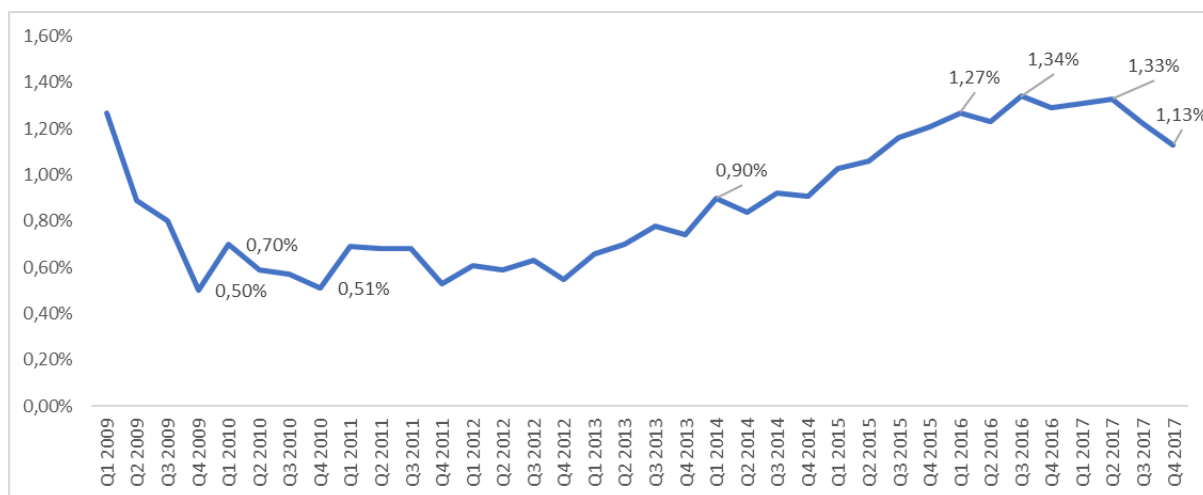
Figure 5: Total working vacancy rate
Source: Own creation based on National Institute of Statistics data

At a national level, as can be observed in Figure 5 the general trend in the total working vacancy rate is one of growth moving from lows of 0.50% in Q4 2009 to 0.70% in Q1 2010. Between 2011 and 2014 the overall direction is one of increase, climbing to 0.90% in Q1 2014, to 1.27% in Q1 2016, to a peak of 1.34% in Q3 2016, ultimately settling at 1.13% in Q4 2017, a mild decrease from previous years.
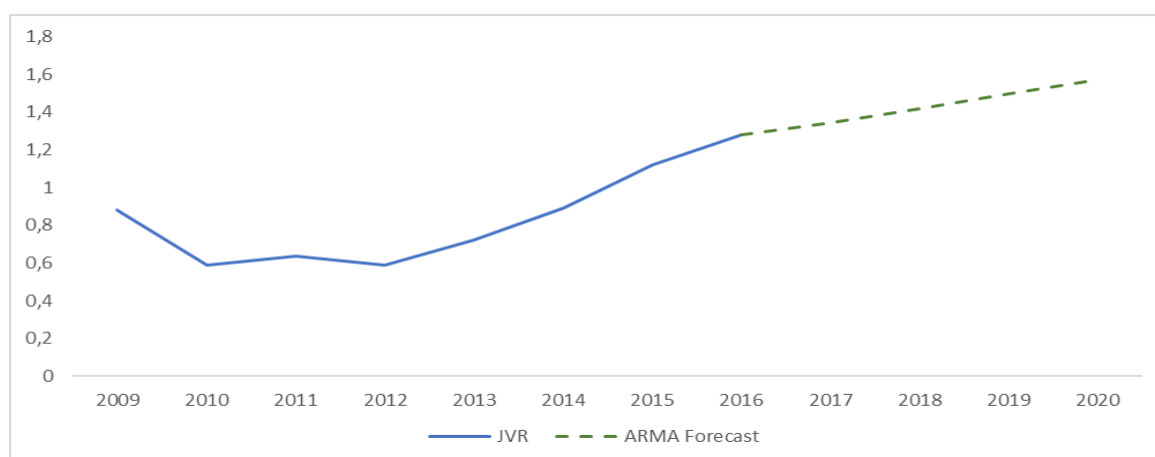
Figure 6: Total working vacancy rate forecast 2020
Source: Own creation based on National Institute of Statistics data

At a national level, the total job vacancy rate has increased from a low of 0.59% in 2010 to 0.72% in 2013 and a peak of 1.28% in 2016. The forecast model predicts a level of 1.34% in 2017, in 2018 it is forecast to reach a projected level of 1.42%. This trend could continue into the future with small corrections, reaching 1.50% in 2019 and 1.57% in 2020. When forecasting the Total job vacancy rate with the ARMA model at a national level for the period spanning from 2016 to 2020, a continuation trend can be observed. This is to some extent significant since an increase in the Job vacancy rate signal that there is a deficit of labour resources for key areas.

290

5. CONCLUSION

The ageing and declining population present a series of challenges that signal future labour market imbalances. Romania's population is ageing at a rapid pace, this means that a significant portion of its workforce will retire by the end of this decade causing a vacuum of skilled, well-trained workers (Cristea et al, 2016; Cristea et al., 2010). This phenomenon coupled with a decline of the younger generations which choose to migrate for higher wages and better living conditions will further destabilise the labour market causing more disparities between the supply and demand of labour resources (Noja and Cristea, 2016). Over a long enough time frame, there is the possibility for Romania to become a labour force importer nation, due to its prime active age population migration and due to low fertility rates. Over the years the requests from both the private and public sectors have been fulfilled to the fullest extent by the ever-increasing participation of women in the labour force this, however, presents a few challenges. Women, due to this demand, will postpone birth for a more extended period of time, which will cause fertility rates to drop further. Low wages and living standard also add to this phenomenon since most young people tend to avoid having children at an early age due to small earnings. Between 1990 and 2016, the occupation rate for all region has seen a steady decrease, this means that businesses have a harder time than in the past employing workers. The working vacancy rate has also moved upwards, reflecting the need for workers, from 0,59% in 2010 to 0,72 % in 2013, to a peak of 1,28 % in 2016. Projections for the job vacancy rate show this trend continuing into the future. This development will affect economic growth over the long run by transferring resources from investments into infrastructure and education to a more social security oriented economy (Cristea and Thalassinos, 2016). To mitigate this challenges, newer measures are needed to be set in place that will help to correct these imbalances (Cristea et al., 2014). The government needs to work to provide a more inviting labour market for workers from outside the country, this might include lowering taxes, increasing the minimum wage, providing better education. With enough time solutions can be reached that will help to mitigate a large number of these issues, averting much of the consequences of demographic ageing and population decline on the labour market.

LITERATURE:

1. Alam, M., Mitra, A. (2012). *Labour market vulnerabilities and health outcomes: older workers in India*. Journal of Population Ageing, 5, pp. 241-256.
2. Alders, P., Broer, P. (2004). *Ageing, fertility, and growth*. Journal of Public Economics, 89, pp. 1075-1095.
3. Bauer, T., Zimmermann, K.F. (1998). *Causes of international migration: a survey, in C. Gorter, P. Nijkamp, J. Poot (eds.), „Crossing Borders: Regional and Urban Perspectives on International Migration"*, Aldershot: Ashgate, pp. 95-127.
4. Becker, G. S. (1991). *A treatise on the family*. London. Cambridge: Harvard University Press.
5. Bell, D. N., Rutherford, A. C. (2013). *Older workers and working time*. The Journal of the Economics of Ageing, 1-2, pp. 28-34.
6. Börsch-Supan, A. (2013). *Myths, scientific evidence and economic policy in an aging world*. The Journal of the Economics of Ageing, 1-2, pp. 3-15.
7. Cristea, M., Thalassinos, I. E. (2016) *Private Pension Plans: An Important Component of the Financial Market*. International Journal of Economics and Business Administration 4.1, pp. 110-115. Cristea, M., Dracea, R., Marcu, N. (2010) *The direction of the financial sector's involvement in overcoming crisis: A case study of Romania*. African Journal of Business Management 4.15, pp. 3356.

8. Cristea, M., Marcu, N., Cercelaru, O. V. (2016) *Longer Life with Worsening Pension System? Aging Population Impact on the Pension System in Two Countries: Romania and Croatia.* Economic and Social Development: Book of Proceedings, p. 28.
9. Cristea, M., Mitrică, A. (2016) *Global Ageing: Do Privately Managed Pension Funds Represent a Long Term Alternative for the Romanian Pension System? Empirical Research.* Romanian Journal of Political Science, 16(1), p. 63.
10. Cristea, M., Marcu, N., Drăcea, R. (2014) "Difficulties of the supporting pensioners by current employees–alternative to pension systems at international level. Empirical analysis in Romania." *Theoretical and Applied Economics* 21, no. 5, pp. 51-68.
11. Constantin, D. L., Vasile, V., Preda, D., Nicolescu, L. (2004) *Fenomenul migraţiei din perspectiva de aderare din România la UE*. Institutul European din România, Bucureşti.
12. Easterlin, R. A. (1968) *Population, labor force, and long swings in economic growth*. National Bureau of Economic Research, New York.
13. Noja, G. G., Cristea, M., Working Conditions as Key Drivers of Economic Growth: Empirical Evidence For Europe, 21st International Scientific Conference on Economic and Social Development Belgrade, Serbia, 18-19 May 2017, pp. 59-71.
14. Hock, H., Weil, D. N. (2012) *On the dynamics of the age structure, dependency and consumption.* Journal of Population Economics, 25, pp. 1019-1043.
15. Navaneetham, K., Dharmlingam, A. (2012) *A review of age structural transition and demographic dividend in South Asia: opportunities and challenges.* Journal of Population Ageing, 5, pp. 281-298.
16. Nicolae, M., Radu, B. M. (2007) *Socio-Economic Effects of the Labour Force Migration in an Enlarged Europe*. Romanian Journal of Economic Forecasting, no. 2.
17. Radu, L., Radu, C. (2014) *Consequences Of The Demographic Crisis.* Global Economic Observer, vol. 2, pp. 161-172.
18. Eurostat, (2000). *Eurostat Glossary on Demographic Statistics*. Eurostat. Retrived 02.03.2018 from https://stats.oecd.org/glossary/detail.asp?ID=6639
19. Silasi, G., Simina, O. (2008). *Migration, Mobility and Human Rights at the Eastern Border of the European Union – Space of Freedom and Security*. Editura Universităţii de Vest, Timişoara.
20. Whittle, P. (1951). *Hypothesis testing in times series analysis.* Uppsala: Almqvist & Wiksells Boktryckeri AB.

MARKET SIZE AND TRESHOLD ISSUES IN RELATION WITH BROWNFIELD REDEVELOPMENT

Mariann Szabo
Budapest University of Technology and Economics, Department of Environmental Economics, Hungary
szabo_m@eik.bme.hu

ABSTRACT
As Loures and Vaz (2018) points out abandoned land, contaminated land, derelict land, underutilized land and vacant land are various types of brownfields. As CABERNET (Concerted Action on Brownfield and Economic Regeneration Network) -what is the European multi-stakeholder Network that focuses on the complex issues that are raised by brownfield regeneration- declares, brownfields are sites that: have been affected by the former uses of the site and surrounding land, are derelict and underused, may have real or perceived contamination problems, are mainly in developed urban areas, and require intervention to bring them back to beneficial use' (CABERNET, 2006). The regeneration of brownfields is a challenging task due to their complexity. After the collapse of the Soviet Union, the economic structure of Hungary has been changed and the regeneration of brownfields have become an important challenge for many urban areas. Several regeneration has been implemented successfully as new functions were introduced. But there are several obstacles for successful developments in which the market size and threshold issues play important role. The aim of the research is to demonstrate an inventory of criteria for long-term viable redevelopments. In-depth analysis, site visits and interviews will be applied. The cases will be collected from absolutely different urban areas representing the complexity of regeneration (a regional centre from the Hungarian Great Plain and a settlement near the Hungarian-Austrian borderline) which indicates the importance of threshold question. The research would contribute not just to the brownfield regeneration scientific field but also to the regional science since it links the development to market size and threshold issues. For explaining the scientific background 'New Economic Geography' theory of Paul Krugman will be presented in order to justify the importance of agglomeration economies and increasing returns in long-term viability of urban areas.
Keywords: Brownfield regeneration, Long-term viability, New Economic Geography, Regional development

1. INTRODUCTION
Regions, often conceptualized as a unit of social-economic space, characterized by production structure of all ownership forms, population, employment concentration as well as governmental institutions, fundamentally, a social, cultural, political and economic interaction system (Agnew, 2000, 2001; Haukkala et al., 1999 in Palekiene et al., 2015) are the focus points for assessing and evaluating different development, furthermore economic policies. Actually, the region is the reference unit of those material and immaterial resources which influence the long-term viability including the adaptive capacity which importance is growing in nowadays' economy, where regional and local economic development is far from a smooth and incremental process, instead, as Simmie and Martin (2010) notes it is the subject to all sorts of interruptions and disruptions, like periodic economic recessions, the unpredictable rise of major competitors elsewhere, unexpected plant closures, the challenges arising from technological change and like, and the state responses answering these challenges and the degree of decentralization and the adaptive capacity of territories differs to high extent even in the same national economy. The change not just affects the economic structure of regions but influence the wellbeing of

inhabitants, employees and for sure, the land use. As Christopherson et al. (2010) describes, a resilient region is more than a territory which is successful at economic development (although the importance of economic viability is not evitable for population retention purposes), rather it is one which is capable to maintain economic success over the long term in face of the inevitable adaptation required by changes in international competition, shifts in consumer demand and other such 'shocks' to the system. Several studies evaluated the different factors, or even system of factors which enable a region to adjust and adapt over time; a strong regional system of innovation (Clark et al., 2010; Howells, 1999 in Christopherson et al., 2010), strength in factors that create a 'learning region' (Archibugi and Lundvall, 2001 in Christopherson et al., 2010), modern productive infrastructure (transport, broadband provision, etc.), skilled, innovative and entrepreneurial workforce, supportive financial system providing patient capital and finally a diversified economic base, not over-reliant on a single industry (Christopherson et al., 2010) are all crucial for long-term viability. As one region is more effective than other, one has great potential for adaptability calls the attention to the new centre-periphery system within and among nations. We continuously face the diminishing importance of the so called classical regional development factors including population, natural resources, capital and innovation since the globalization-driven free flow of these evaluates the territorial, locational aspects of regions why certain territories are more preferable to be planted or how the effect of international competition could reform the production structure of multi- and transnational companies which economic power often greater than national economies. The endogenous growth theories emphasise the importance of human resource, since the economic development is the function of higher productivity; as Lucas (1988) and Romer (1994) describe, the growth is due to the more effective use of inputs. Both the technology and the human resource could be handled as simple regional development factors, but in real they are those resources, which quality differs to high extent among regions where they come from. As the quality differs, those regions, which are able to attract, 'produce' and maintain its resources will be more effective. Even the efficacy of development funds differs among regions due to the quality level differences of technology and human resources in line with the human development. The emergence of these regions, often referred as 'learning regions' or 'special economic spaces' is due to the increasing return of agglomeration economies. The new economic geography is responsible for explaining how these spaces are created. As Fujita and Krugman (2004) describes the formation of a large variety of economic agglomeration (or concentration) in geographical space occurs at many levels, having a variety of compositions: let just consider when small shops and restaurants are clustered in a neighbourhood. The core-periphery system in the geographical space is due to the existence of centripetal and centrifugal forces. While centripetal forces including market-size effects, thick labour markets and pure external economies triggers concentration, centrifugal forces including immobile factors, land rents, pure external diseconomies retard. In the core due to the market-size effects the return to investments are higher and more safe. This influence the redevelopment of brownfields as the most common forms: estates (housing, offices), trade points, community places require great market size. The increasing return in urban spaces means as the concentration grows the region due to the market size and income patterns will be more attractive which could conserve the core-periphery structure. In Hungary, after the collapse of the Soviet Union, the economic structure of the country has been changed and the regeneration of brownfields have become an important challenge for many urban areas. The market size, the threshold of the investments is crucial not just among different-sized settlements but even in the same settlement where geographical conditions, market size pattern also result core-periphery structure. The growing market size makes projects rentable but considering the social and ecological concerns of brownfield redevelopment in order to achieve the desired state integrated measures must be introduced.

Several regeneration has been implemented successfully as new functions were introduced. But there are several obstacles for successful developments in which the market size and threshold issues play important role.

2. METHODS

The aim of the research is to demonstrate an inventory of criteria for long-term viable redevelopments. In order to reach that aim I applied in-depth analysis with site visits and interviews. Two cases have been analysed which have common features as both projects function as commercial centres: a shopping mall and a hypermarket. Despite that; the circumstances of the renewal, including the decision making process, timing, effectiveness from urban development point of view differs to high extent. The starting point resembles to each other too. The economy of Kőszeg -a city of 12,000 inhabitants near to the Austrian-Hungarian borderline belongs to both the agglomeration area of Szombathely, a regional centre of the Western Transdanubia region of Hungary and Burgenland, Austria- has been changed after the collapse of the Soviet Union. Nowadays the city has a large employer, the Kromberg-Schubert Ltd. operating at the electronics industry, while most of the inhabitants are employed in SMEs mostly in service sector as well as due to the proximity of Austria many people are working there. In the soviet system the textile industry was the profile of the economic portfolio, the Baize Factory (case 1) was one of the largest employers of the settlement. The factory was closed in the begging of the 2000s and the area have been set into parts. One part, namely the tower of the factory had been protected as a monument for preservation purposes. The demolition of the factory was started from the 2000s and it was almost finished when suddenly, despite the protection status the tower was teared down. This event called the attention to the story of the factory on national level too. The city of the other case study, Szeged -the largest city and regional centre of the Southern Great Plain with approximately 162,000 inhabitants, where one of the most distinguished universities in Hungary, The University of Szeged operates and the main employer of the city is the University- has lost its importance in manufacturing after the regime's change. The Hemp spinning factory (case 2), founded by Nándor, Bakay in the age of the Austro-Hungarian Monarchy was the employer of thousand people in the '30s. After the demolition works it was rebuilt as a shopping mall in the 2010s as the commercial role of the city was strengthened in line with the growing number of university students from abroad. The sizes of the settlements, cities (in Hungary, due to the uneven spatial development patterns Szeged is considered as big city while Kőszeg is a smaller one), the timing affected the success of the regeneration which call the attention to the threshold problem.
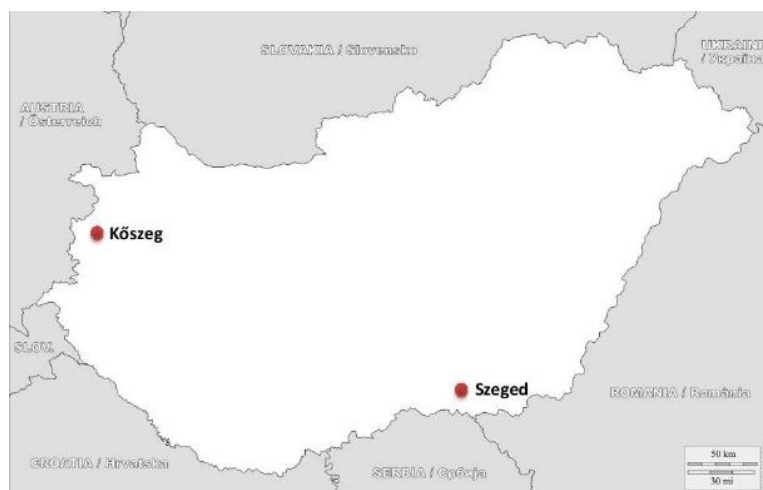
Figure 1: Cities of the case studies in Hungary. Own compilation. The map was retrieved 12.03.2018 from http://d-maps.com/carte.php?num_car=3560&lang=en

3. DISCUSSION
3.1. Brownfield development

As Loures and Vaz (2018) describe abandoned land, contaminated land, derelict land, underutilized land and vacant land are various types of brownfields. As CABERNET (Concerted Action on Brownfield and Economic Regeneration Network) -what is the European multi-stakeholder Network that focuses on the complex issues that are raised by brownfield regeneration- declares brownfields are sites that:

1. which have been affected by the former uses of the site and surrounding land;
2. are derelict and underused, may have real or perceived contamination problems;
3. are mainly in developed urban areas;
4. and require intervention to bring them back to beneficial use' (CABERNET, 2006).

These sites are the legacy of a century of industrialization (NRTEE, 2003 referenced by Chen et al., 2008) but they represent opportunities for large-scale urban improvements, and for reduction of expansion pressure into surrounding green fields. Hence, brownfield redevelopment is an ongoing issue for governments, communities, and consultants around the world, as due to the increasing population the demand for land also increased rapidly. Although, the regeneration of brownfields is a challenging task due to their complexity. As Loures and Vaz (2018) emphasize that from the 2000s the regeneration of brownfields (generally used to describe both spatially and formalistically everything from polluted industrial landscapes to former factory buildings, including vacant or abandoned properties usually found in older, declining sections of a city) have become a major issue in urban development context, but understanding the variability existing within the different landscapes generally typified as brownfields, contributing somehow to prevent their regeneration and augmenting the length of time land is vacant or underutilized is crucial. In their work they provide the analysis of twenty-five brownfield redevelopment projects, in order to identifying on the one hand, the existing brownfield typologies, and on the other hand the benefits associated to each of the identified brownfield typologies. The main outcome of the research is a set of brownfield typologies which have been identified in order to enable designers, planners them to better decide on which sites to developed first, considering not only the objectives behind the development, but also the different dimensions positively affected by the redevelopment. The results have strengthened the idea which has come into the surface during the intensive period of brownfields regeneration projects, that the criteria for successful implementation require avoiding the spotted redevelopments in urban areas instead prepare and implement a local strategy for their developments; where planning and design options should maximize the reuse of previously developed land by using methods and principles which enable the redefinition of these landscapes through community-based interdisciplinary actions, integrating multifunctional longer-term solutions based on social-cultural, economic and environmental and aesthetic objectives (Loures and Vaz, 2018). Loures (2011) introduces two main stages of the regeneration of brownfields which could be applied to all brownfield typologies no matter to differences in contamination, geographical position or size, etc.

Table following on the next page

Table1: Stages of brownfield redevelopment processes (Loures, 2011)

Remediation	Initial state: brownfield
	Process: cleanup
	• Preliminary site assessment
	• Site investigation and risk assessment
	• Feasibility study
	• Remedial design and engineering
	• Remediation and environmental cleanup
Remediation and redevelopment	Result/initial state: site available for potential uses
Redevelopment	Process: land transformation
	• Predevelopment, economic base
	• Commitment
	• Design
	• Construction
	• Occupancy
	• Result: end use

Loures (2011) calls the attention to the importance of involving stakeholders into the decision-making process. Participative planning enables local governments to facilitate economically rentable redevelopments which meets the needs and requirement of residents. Another criterion for the success would be to handle urban brownfields as a system; the parts are in connections: one intervention influences the possibilities of the whole mass. Focusing just on definite parts could be dangerous in the entire rehabilitation of these areas. Chen et al. (2009) also emphasize the importance of strategic support system for brownfield redevelopment.

3.2. Case study areas

3.2.1. Kőszeg

One of the representatives of the ex-textile industry in Kőszeg is the Baize Factory. Due to the increasing competition and cheap textiles from China the factory was closed. It has become famous when the tower of the factory previously protected as a monument for preservation purposes was teared down. Nor responsible persons and nor consequences. The new landowner, the TESCO has opened a constant exhibition of the ex-function and imitated the outer wall. Talking with residents and reading the feedbacks on the internet the locals do not satisfied with the solution from architectural point of view, nevertheless the supermarket runs well.
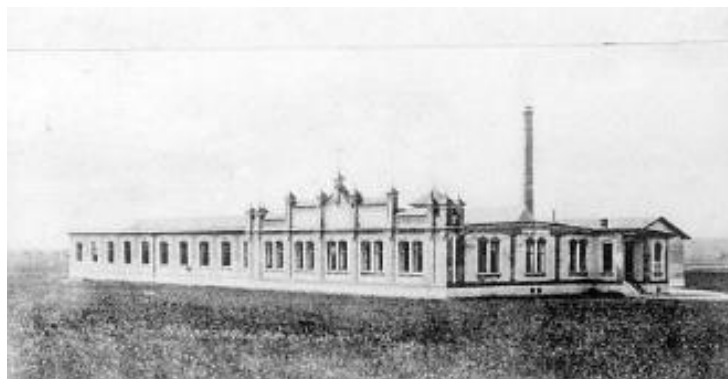
Figure 2: Baize Factory in Kőszeg. (1844). Retrieved 12.03.2018 from http://www.alon.hu/ujrazas-posztgyar-rombolas-ugyeben-hatalyon-kivul-felmento-itelet-birosagi-tudositas

Figure 3: Baize Factory in Kőszeg before deconstruction by ICOMOS. (2009). Retrieved 12.03.2018 from http://www.alon.hu/ujrazas-posztgyar-rombolas-ugyeben-hatalyon-kivul-felmento-itelet-birosagi-tudositas

Figure 4: Imitation: outer wall at the new Tesco hypermarket for the memory of the secretly destructed Baize Factory, Kőszeg. (2011). Retrieved 12.03.2018 from https://elismondom.wordpress.com/

3.2.2. Szeged

One of the main economic branches in the Soviet system of the city was textile industry. Although, the redevelopment of the hemp spinning factory was in the 2000s the effect of the intervention on urban level is important. That time the city, the university invited and accepted growing number of university students including ones from abroad and through the revitalization and infrastructure development works the city centre has been grown. The case is a good example that even in urban areas the solutions for various challenges must be answered in causality, enabling the economy to adapt in time.

Figure following on the next page

Figure 5: Hemp spinning factory in Szeged. (1870). Retrieved 12.03.2018 from
http://egykor.hu/szeged/szegedi-kenderfonogyar/2199

Figure 6: Árkád Shopping Mall, picture by Antal, Szentendrei. (2012). Retrieved 12.03.2018
from http://epiteszforum.hu/21-szazadi-szonett-szegedhez-arkad-bevasarlokozpont

4. CONSLUSION

The influence of market size, the importance of threshold and timing as well as the need for participative design in case of urban redevelopments are all important aspects when we consider brownfields. Urban developments are in the middle considering the environmental – social – economic aspects of the vitality of urban areas. By participative planning the decision makers could ensure the maximization of social utility. Although it is not an easy project, the redevelopments as part of the settlement development strategy must be handled in integrated way with other developments in order to raise synergies among the realized components. In case of the scarcity of threshold which could maintain the redevelopments of brownfields income generation patterns and possibilities must be assessed by regional planning methods.

LITERATURE:
1. Concerted Action on Brownfield and Economic Regeneration Network [CABERNET] (2006): Sustainable Brownfield Regeneration: CABERNET Network Report. Retrieved 20.02.18. from:
   http://www.palgo.org/files/CABERNET%20Network%20Report%202006.pdf
2. Chen, Y., Hipel, K. W., Kilgour, M., Zhu, Y. (2009). A strategic classification support system for brownfield redevelopment. *Environmental Modelling & Software 24*(5), p. 647-654.
3. Christopherson, S., Michie, J., Tyler, P. (2010). Regional resilience: theoretical and empirical perspectives. *Cambridge Journal of Regions, Economy and Society 2010*(3), 3-10. doi:10.1093/cjres/rsq004
4. Fujita, M., Krugman, P. (2004). The new economic geography: Past, present and the future. *Papers in regional science 83*(1), p. 139-164. doi:10.1007/s10110-003-0180-0
5. Loures, L. (2011). Planning and design in postindustrial landscape transformation. East bank arade river, lagoa case study (Ph.D. thesis). *University of Algarve.*
6. Loures, L., Vaz, E. (2018). Exploring expert perception towards brownfield redevelopment benefits according to their typology. *Habitat International 72* (2018), p. 66-76
7. Lucas, R. E. (1988). On the Mechanics of Economic Development. *Journal of Monetary Economics 22*(1), p. 3–42.
8. Palekiene, O., Simanaviciene, Z., Bruneckiene, J. (2015). The application of resilience concept in the regional development context. *Procedia - Social and Behavioral Sciences 2015*(213), p. 179 – 184.
9. Romer, P.M. (1994). The Origins of Endogenous Growth. *Journal of Economic Perspectives, Volume 8*(1), p. 3–22
10. Simmie, J., Martin, R. (2010). The economic resilience of regions: towards and evolutionary approach. *Cambridge Journal of Regions, Economy and Society 2010* (3), 27-43. doi: 10.1093/cjres/rsp029

TRADE RELATIONS AND TRADE BALANCES AS THE INDICATORS

Czegledy Tamas
University of Sopron, Hungary
czegledy.tamas@uni-sopron.hu

ABSTRACT
Commercial integrations worldwide operate with a low or zero customs trade policy, so their tools are very limited to change the trends. Especially the German position is interesting examining the surpluses and deficits. Foreign trade is basically a zero sum game, because, if one country imports, it is the export of an other. The persistent deficits inherent in global trade and so accrue the reserves and financing demands. This of course does not necessarily mean that the countries which have, deficits, live worse, and those, where we can observe surplus for many years, can maintain their high living standards continuously. Trade promotion and realisation of profit or deficit accumulated is much more informative than the simple analyse of the balance. Of course the permanent deficits budgetary impact is not negligible, while the influence of extra funding opportunities means more for many countries.
Keywords: trade positions, trade balance, integrations

1. INTRODUCTION

In 2015 China was the export world champion. According to Reuters, Germany is again export world champion in 2016 with the biggest surplus in goods and services trade. But what does it mean? Germany exported more goods in the last years than it imported which led to an export surplus of 297 Billion US-Dollar in 2016. But a huge trade surplus can lead to risks, problems and chances. As an introduction to this topic it is necessary to define what a trade surplus actually is. After explaining this theoretical part there will be an overview about the German trade situation and a look more closely at the most important export products. Furthermore the development of German exports and imports will be presented and based on that Germany´s trade balance will be explained. The presentation of Germany´s trade will be described also in connection with the most important trading partners as well as in relation to the German gross domestic product (GDP). After explaining the most important facts about Germany´s trade situation, it is important to mention the influence of Germany´s trade surplus. It will be described on the national level, in connection with the European Union (EU) and in international comparison to the USA and China. Especially the influence in the European Monetary Union and within the International Monetary Fund (IMF) will be described. Besides that it will answer the question why Germany has this huge trade surplus by illuminate two more important reasons for that. The following chapter is about possible solutions for Germany to get control over their trade surplus and to prevent future imbalance. It presents different actions which Germany´s government can implement to reduce their trade surplus. And also display the German political and economic opinion about the trade surplus as well as to explain why the European fiscal policy, where Germany has no control of, leads to this trade surplus. The last chapter will represent future risks and possibilities for Germany´s trade surplus. It is divided and explained in two parts with focus on current topics like Brexit and the growth of the information sector.

2. TRADE SURPLUS

First of all it is necessary to define "foreign trade surplus" to understand the following content. In general the trade balance of a country is shown by the difference between the value of a country's exports and the value of a country's imports.

For countries where the value of the exports is higher than the value of the imports these have a foreign trade surplus. One example of this case is Germany. (Lexicon.ft.com, 2017)

To get a further look about the whole situation it is useful to talk first about the development of the value of exports and the value of imports separated and after this come to the trade balance. On the table below there are shown the German exports from 2010 until 2016 in billion €. These table incudes all kind of exports so there is not a distinction between the economic sectors. There is a clear trend visible. During the years from 2010 (951.90 billion €) to 2016 (1,206.86 billion €) the value of the German exports increased. Only in 2013 there was a decrease from 1,092.63 to 1,088.03 billion €. Next to this decrease it is also remarkable that the value of exports were nearly stable from 2015 to 2016. The increase was only about 13 billion € which is in comparison to the other years a small change.
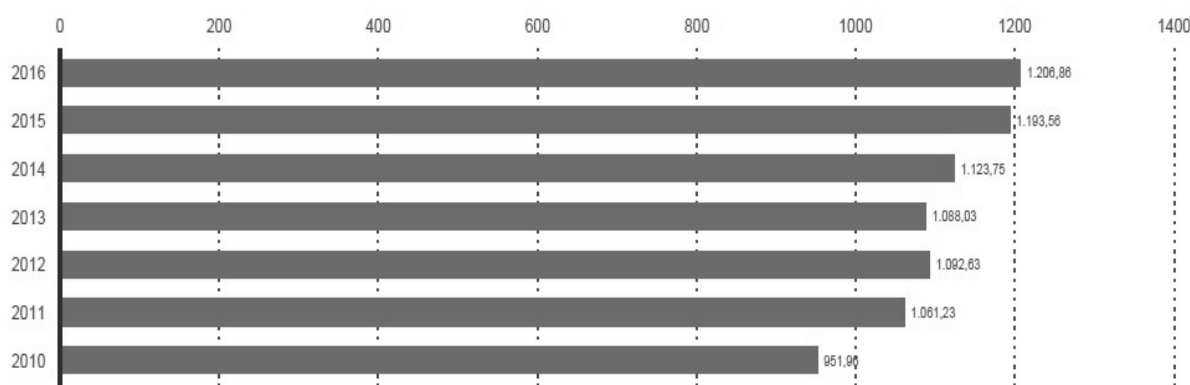
Figure 1. Exports of Germany from 2010 to 2016 in billion € (De-statista-com.ezproxy.hwr-berlin.de, 2017)

As already the value of the exports the value of the imports is also made by a sum of all economic sectors. Opposite to the exports the value of the imports did not increase that significantly. Even there was a huge increase in 2010 from 797.1 billion
€ to 902.52 billion € in 2011. Similar to the exports the value of the imports also decreased in 2013 to 890.39 billion € and did not grow that much from 2015 to 2016 (about 5 billion €).
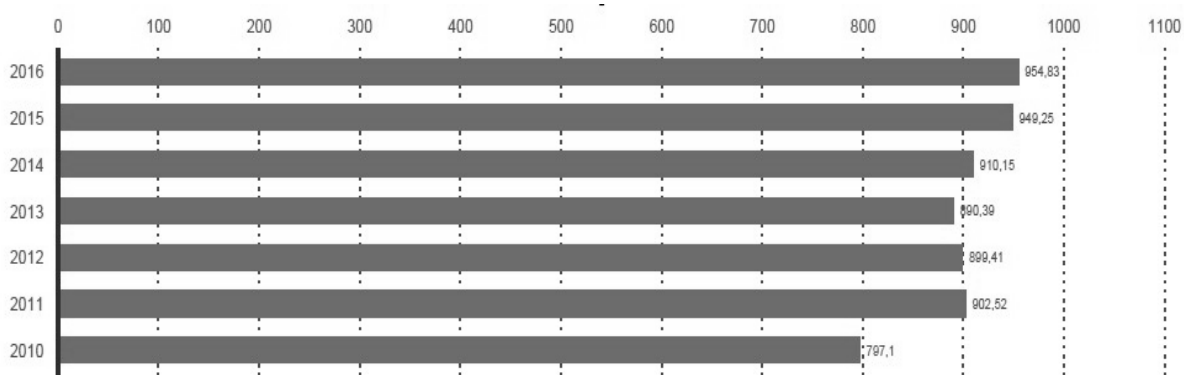
Figure 2. Imports of Germany from 2010 to 2016 in billion € (De-statista-com.ezproxy.hwr-berlin.de, 2017)

After analysizing the German exports and imports let's come to the trade balance. In the case of Germany the trade balance is postive which means that the value of the exports is higher than the value of the imports. This positive trade balance is also called "foreign trade surplus". The table below shows the development. As a consequence of the increase of the value of exports and the value of imports the foreign trade surplus also increased.

302

In 2010 the value was 154.9 billion €, in 2016 it was about 100 billion € higher. The changes espcially from 2011 to 2012 (plus 34.5 billion €) and from 2014 to 2015 (plus 35.7 billion€) are significant.
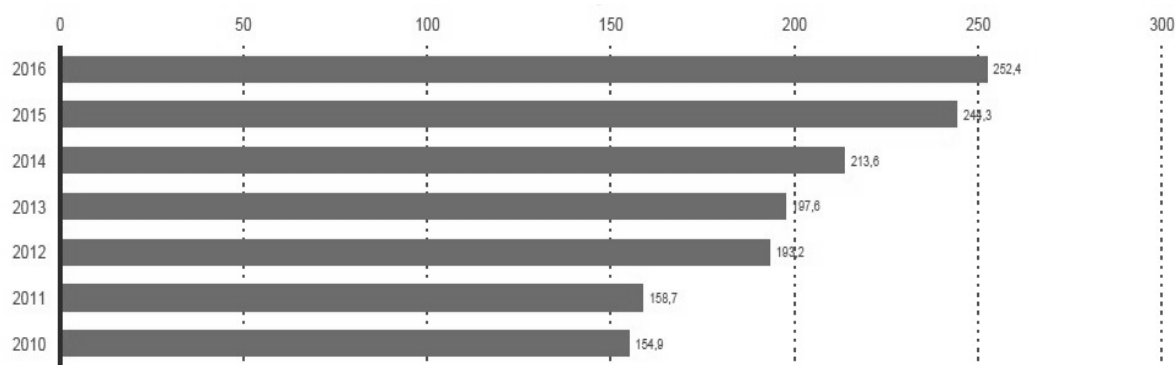
Figure 3. German trade balance from 2010 to 2016 in billion € (De-statista-com.ezproxy.hwr-berlin.de, 2017)

The chart above dealt with the differences between exports and imports while the chart below deals with the foreign trade quota. In general it describes the shares of exports and imports in relation to the gross domestic product. Over the years the quota maintained more or less on the same level. The percentage varied around 70% while it had the lowest point in 2010 (67.85), it reached the peak in 2011 (72.6%). In 2016 the foreign trade quota was 69%.
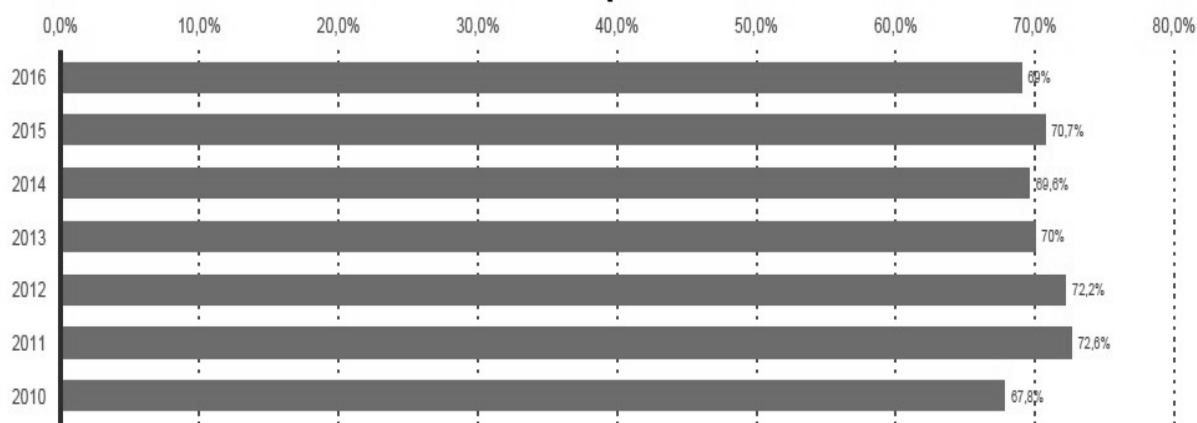
Figure 4.: Foreign trade quota from 2010 to 2016 (De-statista-com.ezproxy.hwr-berlin.de, 2017)

Title: German export goods in 2016 in billion € (De-statista-com.ezproxy.hwr-berlin.de, 2017) The following chart shows the volumes of the biggest trading partners in billions of EUR in 2016 and 2015. All in all the trading partners are welfare/big countries with an influence on the global economic market.

Figure following on the next page

Figure 5. Exports and imports with trading partners of Germany in 2016 and 2015 (Federal Statistics Office, 2017)

As the last chart only dealt with the relation to the exports, the following one considers the export surplus. This analysing method shows a different order of priority. First ranked is now the United Kingdom. That means even if the United Kingdom is not the country where most of Germany's exports going to, the highest surplus is gained there. In 2016 it was 50.28 billion €. On the second rank is placed the USA (48.85 billion €), followed by France (35.45 billion €). What is also remarkable is the role of Austria and the United Arab Emirates. Even though they are not part of the top five export countries they still influence the German foreign trade surplus.
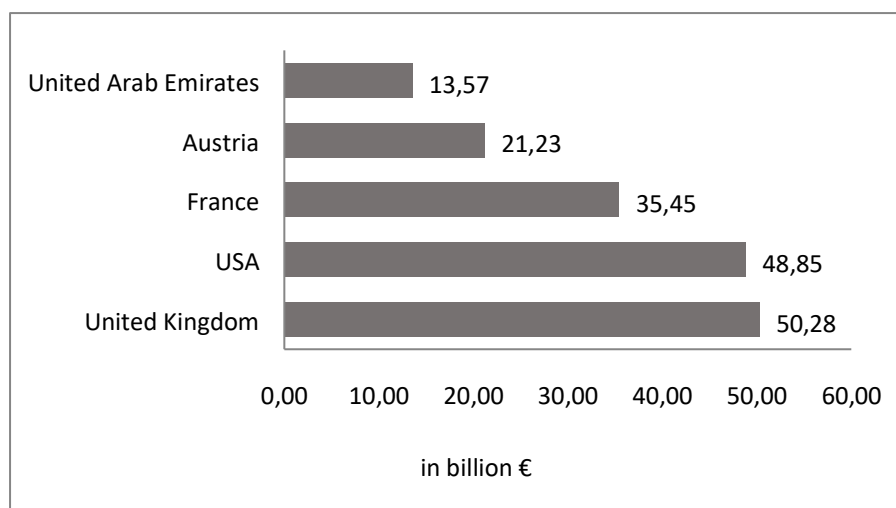
Figure 6. Trading partners in 2016 measured by export surplus in 2016 in billion € (Destatistacom.ezproxy.hwr-berlin.de, 2017)

3. NATIONAL AND INTERNATIONAL INFLUENCE OF GERMANY´S TRADE SURPLUS

The German industries and business are working successfully. They are selling their goods and services as much as possible in their home country and especially a lot to foreign countries. That led to a trade surplus about 252.4 billion €. A trade surplus develops if a country exports more products and services than it imports (Neuhaus Carla, 2017).
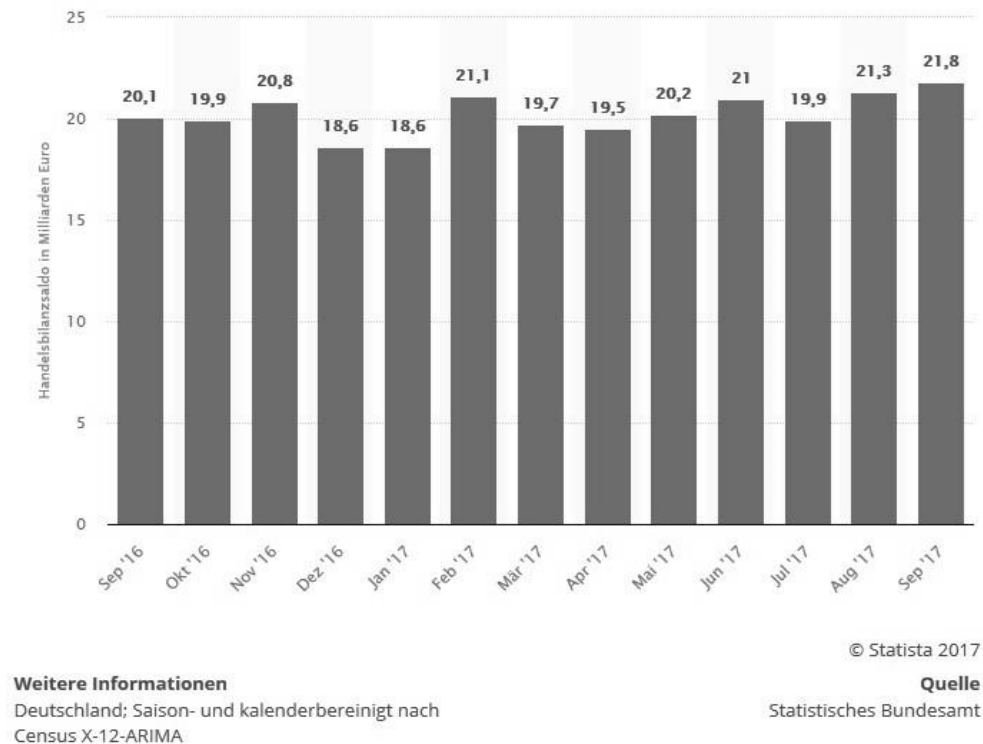
Figure 7. Trade Account Balance Germany from September 2016 to September 2017 (https://de-statista-com, 2017)

Nothing shows more the competitiveness and the well placed German economy. As to see in the previous chart the economy was less affected because of possible politic changes. Even by this unstable political environment, currently the new German government is still not ready respectively working after the elections in September. The economic performance of Germany is still increasing. To understand the high level of Germany´s trade surplus is China as one of the biggest export nation, is a fitting indicator. China, for instance, has been working to reduce their dependence on exports and its trade surplus has declined accordingly. The distinction of having the largest trade surplus is both shifting to Germany, in absolute terms and relative to GDP. According to the following chart there is a continuous trend that is going on since 2000.

Figure following on the next page

Germany Stands Out
Current account balance as a percentage of gross domestic product

■ China ■ Germany ■ Japan
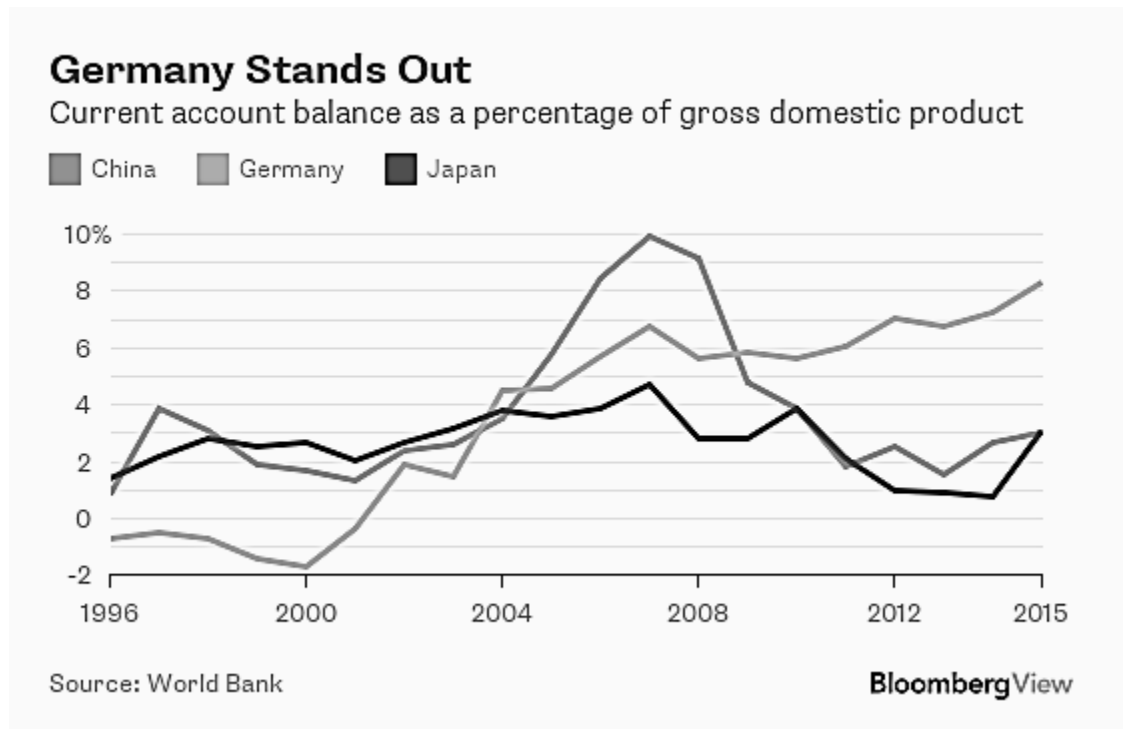
Figure 8. Current account balance of Germany, China and Japan (% of the GDP), Source: IBRD

But why does have Germany this high trade surplus?

The German export industry has one big advantage. It is set up broadly. For example German machines are wanted as well as chemicals. Germany makes good products which foreigners want to buy. For that reason it expects the trade surplus is a sign of economic success but other countries also make quality products without developing such a large surplus. The following part explains that there are two more important reasons for Germany´s trade surplus (Bernanke B., 2017). First, although the euro - the currency that is shared in the monetary union in the EU with 18 other countries may or may not be at the right level for all 19 countries as a group. It is too weak, regarding German wages and production costs, to be consistent with balanced German trade. In July 2014, the IMF stated that Germany´s inflation adjusted exchange rate was undervalued by 5 to 15 percent. Since then the euro has fallen by additional 20 percent relative to the dollar. The comparatively weak euro is an underappreciated benefit to Germany of its participation in the monetary union. If Germany would still use Deutsche Mark, it would be much stronger than the euro is today and would reducing the cost advantage of German exports substantially (Bernanke B., 2017). The second reason is that the German trade surplus is further increased by policies, tight fiscal policy for examples that suppress the country´s domestic spending and including spending on imports. In a slow-growing world the German trade surplus is a problem. Several other members of the euro zone are in deep recession with high unemployment and less or with no fiscal space, meaning that their fiscal situation do not allow to raise spending or cutting taxes as a way of simulating domestic demand. The fact that Germany is selling so much more than it is buying from its neighbours as well as from around the world reduces output and employment outside of Germany at a time at which monetary policy in many countries reached its limits (Bernanke B., 2017).The high amount of exports shows especially the quality of German products and services on the world market. The high export is in this case are not the problem but the high export surplus. Even the French president Emmanuel Macron as well as Christine Lagard chief of the IMF and the President of the USA Donald Trump, see conflicts within this issue.

When an export surplus of a country is increasing on and on like in Germany, the IMF is warning of a strong excessive imbalance and as a result of that an unstable financial system. To example Germany is competing with the USA. The USA is importing more goods and service than exporting their own ones. If Germany exports more than it imports it gives loans to the USA in this case. That means the USA gets into debts with his trading partner Germany. When these dimensions are getting bigger and bigger the risk is not only for the USA – it is also a problem for Germany. This development led to the point that Germany owns a lot of American government bonds. If a new financial crisis takes place the American governmental bonds lose value and the German assets will be lost as well (Neuhaus Carla, 2017). That is one of the reasons why also the IMF warned that the German surplus is destructive for the monetary union in Europe as a whole. It is not in Germany´s own economic interest, and makes it even harder for the other member states of the EU to get rid of the current problems. As already mentioned the German surplus did not matter in the days of the Deutsche Mark. The Country revalued the currency from time to time, correcting the problem. How Germany ran its own internal affairs were largely its own business. But as the IMF stated it is an entirely different matter in a monetary union (Evans-Pritchard, 2017). Continuous imbalances within the euro-zone are unhealthy as they lead to financial imbalances and as well as to imbalances growth. Ideally, declines in wages in other euro-zone countries, relative to German wages, would reduce relative production costs and increase competitiveness. But with the euro-inflation well, below and close, under the ECB target of two percent, achieving the necessary reduction would probably require sustained deflation in nominal wages outside Germany. This process would be long and difficult involving extends high unemployment (Bernanke B., 2017). Remarkable is that Germany already gathered this trade surplus the fifth year in a row. That is why the European Commission, under Jean-Claude Juncker already told Germany to do its "homework", to get control about their trade surplus. After the fifth consecutive year the German trade surplus is above six percent, which is not cause by a one-off shock but remains huge even if adjusted lower energy import costs. The EU can fine member states, who are threaten the stability and balance in the EU like Greece for example. Countries like Germany, which have this stability and an unemployment rate less than 4.7%, should therefore enjoying a surge of consumption. But instead of that Germany´s economy saves up money or holds back investments. Therefore the members of the European Commission are demanding to fine Germany. Their huge surplus is threatening the stability of the euro-zone the same way as the southern European member states deficits do (Evans-Pritchard, A. 2017). The system of fixed exchange rate, like in the euro-zone or for instance the gold standard, have historically suffered from the fact that countries with high balance of payments deficits come under severe pressure to adjust, while countries with surpluses face no corresponding pressure. As the IMF stated in its July 2014 report, Germany could help shorten the period of adjustment in the euro-zone and support recovery by taking steps to reduce is trade surplus, even as other EU member states continue to reduce their benefits (Bernanke B., 2017). The whole issue about the German trade surplus shows different effects, positive as well as negative. As a result Germany has a higher level of economic value adds, a higher level of employment and the development of assets in foreign countries. As already mentioned the last effect is threatened of bad debt scenarios. That belongs and leads to a high level of competitiveness especially on the world market. The negative effect of the trade surplus is certainly the high dependence of export. That is why Germany´s development always depends on the development of the global economy. In 2008 when the Lehmann Brothers Bank went bankrupt, it came to a reduction of global production and foreign trade. Especially countries with a high focus on exports were extremely affected by that. Germany´s GDP shrunken in compared to the prior year more than five percent. Japan as another country with a high trade surplus sustained the same effect. In the USA, where the origin of the whole crisis was, the economic output only decreased by three percentages.

The focus on exports including all advantages and disadvantages of that make Germany depends on foreign countries and trade – with all equivalent risks (Neuhaus Carla, 2017).

4. POSSIBLE SOLUTIONS

After explaining the different levels of influence affected by the German trade surplus, this chapter gives an overview about possible solutions and activities to get control about the trade surplus and to prevent further imbalance. Particularly regarding the expected measures, which the IMF an especially the EU persist Germany to do. Also there will be a brief discussion about the correct handling of wages in Germany as a one measurement the IMF and the EU demanded in the past. As well as showing Germany´s political perspective concerning this topic and presenting a factor which Germany has no control of. Foremost there is to say that there is no way of giving a final and complete solution in this chapter. The trade surplus has a lot of different effects on Germany itself as well as the whole world. Because of that the trade surplus is a complex problem; a lot of different factors are depending on this issue. A way to solve this challenge will only be possible in the long-run. Nevertheless there are possible ways to decrease the trade surplus by not damaging the German export performance:

First there is to say that Germany has only a little control about the value of the common currency but it has several available tools and possibilities to reduce the export surplus. Before the explanations of different possible action to reduce the trade surplus start, there is to mention that no economist, especially no German economist, would demand to reduce exports and to make Germany weaker than it is. But still there are multiple ways what Germany could do. One regulating factor that has been already demanded for years, is about to increase the investments, especially in public infrastructure. (Neuhaus Carla, 2017). According to studies it shows that the quality of German infrastructure – roads, bridges and airports for instance – is declining and an investment would improve the infrastructure as well as increase the Germany´s growth potential (Bernanke B., 2017). If Germany spends more money on schools, kindergartens, highways and broadband connectivity it strengthens the domestic market. When the German domestic economy grows all Germans start to spend more money automatically and also of course start buying products from foreign countries. As a result the German imports increase and the exports decrease (Neuhaus Carla, 2017). Remarkable is that in the current political and economic position of Germany. It can borrow money for less than one fifth of a percentage point. Adjusted by the inflation it would lead to a negative real rate of interest. These opportune infrastructure investments would further reduce the trade surplus by increasing domestic incomes and spending, while also raising employment wages (Bernanke B., 2017).

The second possibility is already mentioned and part of the first idea – increasing the wages of German workers. German employees deserve a sustainable raise, and in cooperation with the government, the employers and unions could give them one. Higher wages would speed the adjustment of relative production costs and increase simultaneously the domestic incomes and consumption. Both would lead to reduce the trade surplus (Bernanke B., 2017). The demand of increasing wages is very controversial. Especially the IMF repeatedly accused Germany to strengthen their export economy by supporting wage dumping. Germany could only sell that much goods and services to foreign countries because the companies pay their employees low wages. This assumption is, in particular out of Germany´s perspective, very disputed. For instance, as to see in the following, chart the nominal wages increased in the last years (Neuhaus Carla, 2017).
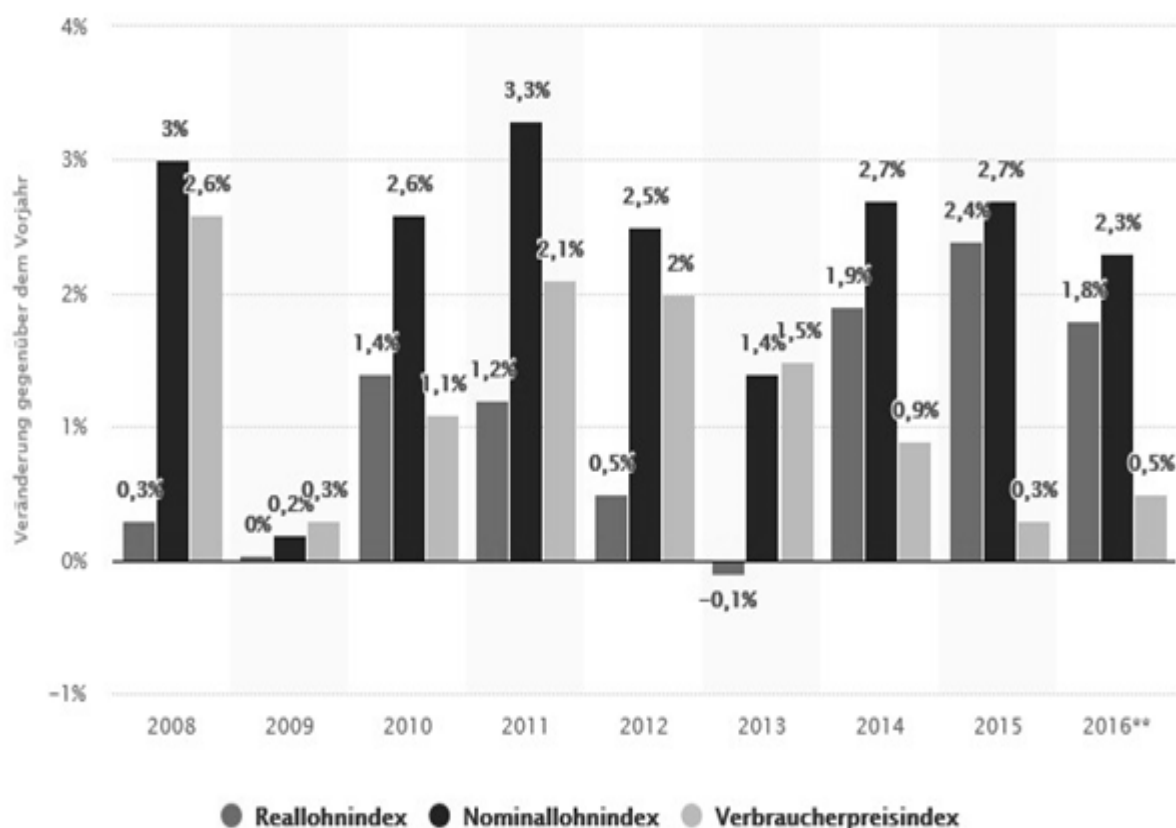
Figure 9. Development of the real wages-, nominal wages- and consumer price index 2008 to 2016. (https://de.statista.com , 2018).

According to a study of DIW (Deutschen Institut für Wirtschaftsforschung) and IMK (Institut für Makroökonomie und Konjunkturforschung) the German export industries pay along with others the highest wages in international comparison. Besides that the IMK came to the result if Germany would had increase the wages about one percentage yearly the German trade surplus would have been even higher. The reason for this: German companies would add the higher costs for wages on the selling price. That would decrease the amount of sold goods to foreign countries. But the value of the whole exports would have increased even higher. That is the way how the reduction of demand would have been compensated. According to IMK an increase of wages can only reduce the trade surplus if the government uses the increasing amount of taxes for more investments (Neuhaus Carla, 2017). The German government does not share the same opinion as the IMF and the EU. The German economy has a stable growth and achieved multiple times the goal to reach the "schwarze Null", not making any new debts in a one year period. For Germany it is an indicator for strength of the German industry to sell goods in this high amount on the world market. Equally all EU member states benefits because of that (Evans-Pritchard, A. 2017). Another factor that cannot be influenced by Germany is the fiscal policy. Germany benefits a lot because of the weak euro. As already mentioned the monetary problems would not exist if Germany would still use its old currency Deutsche Mark. As a part of the monetary union is this compensation mechanism not available. Germany has no control over the currency exchange rate. Only the European Central Bank (ECB) has the influence on that and they are focusing on southern Europe, where a well rated strong euro could lead to another crisis. After all Germany currently benefits from advantageous general conditions: low interest-rates, low energy prices and a favourable exchange rate (Neuhaus Carla, 2017).

5. FUTURE RISK AND POSSIBILITIES

With a look to the future there could be a lot of risks as well as possibilities for the economy of Germany. This chapter will trade with two of them: the Brexit in the United Kingdom and the global growth of the information sector.

5.1. The Brexit

The United Kingdom is an important country in the European Union (EU). It is their second largest economic power. United Kingdom's contribution to the EU budget in 2015 was about 9.7 Billion €. By the Brexit referendum which is the result of a vote on the 23rd June 2016, the country decided to leave the European Union. Next to the consequences in the country itself, this referendum has also an effect on the other 27 EU member states, especially for Germany. (Patel and Reh, 2017) With a look on the relation of exports and imports of the United Kingdom and Germany it becomes clear. Both countries depend on each other. More than 10% of German's imports are from the UK while the exports are about 7%. The getting off could affect this relation dramatically. The EU offers many privileges for countries to trade with each other. Without these there will be customs and other barriers. So it will have a negative impact on the German foreign trade balance in general if one of the main trading partners will lose their priority. (World Economic Forum, 2017)

Figure: Exports of goods between Britain and EU in 2015 in percent of national totals (IMF, 2017)

Caused to the loss of the economic power of the UK in the EU it will be up to the others high powered countries to pay a higher amount of contributions. For Germany it will be approximately a plus of 2.5 billion € to the annual amount. (Schoof et al., 2017) Next to this the German output may decreases to a higher amount than the EU average which means in numbers -0.4 %. As a consequence the consumer prices will decline for long-term. The total investment as already the output will decrease higher than the euro zone average which means -1%. With an eye on the economic sectors in Germany the fabricated metal products as well as IT equipment won't suffer as much as the machinery industry by the Brexit. (Rieth, Michelson and Piffer, 2017)

Another aspect is the financial role of the UK. The Britain bank system is popular for its huge economic influence also on the EU. On the other hand the European Central Bank is located in Frankfurt am Main, Germany. Nevertheless a positive effect on the German financial system is uncertain. First of all the UK does not have the Euro as currency. Second the competition is high. Cities like New York could also take over parts of the financial centre. The role of Germany concerning this issue is as already mentioned unclear. (World Economic Forum, 2017) All in all it is questionable if German foreign trade balance will profit from the Brexit. On the contrary, Germany will have short-term and also long-term challenges concerning this which will also have influence on the foreign trade in higher or lower priority.

5.2 Industry 4.0

Come to the second part of this chapter it is necessary to define the term "industry 4.0". In general industry 4.0 can be seen as a huge digitization of the manufacturing sector. Driven by rising amount of data volumes or the need of new human-machine interactions the revolution is quite popular. (McKinsey & Company, 2017) Industry 4.0 shouldn't be analysed as a separate aspect it is more a part of a whole concept of the smart factory. (Jan Bartodziej, Jan Bartodziej and Consulting, 2017) German's potential to get through this fourth industrial revolution is actually given. Their economy is one of the most competitive in the world. In 2016 the GDP grew 1.9% which is more than every other G7 country. Furthermore the unemployment rate is quite low. So there is a high amount of workforce. But there are also some actual issues which slow down the revolution process. Nowadays Germany lacks in large-scale consumer tech companies like Apple in the United States etc. To reach a higher level it is important to improve in comparable German companies. The most important action is the investment in new technologies such as in technical infrastructure. To reach this level it will be also important to include the policymakers. They may have the power to enforce the companies and the employees by introducing supporting projects or offering educational programs. Being explicit it means a huge change to the culture and the behaviour of German economy. Over all the highest automation potential of sectors is manageable for accommodation and food services (72%), followed by transportation and warehousing (64%). The largest sector, the manufacturing only got a potential of 55%. To come to a conclusion Germany has the basis to manage and include industry 4.0 into the daily economic business. The country is all in all competitive and has enough workforces to establish the new techniques. It will be important to gain the political and governmental support to regulate the system in a way that they support their national companies. If this revolution will be successful, it could have a positive impact on the foreign trade balance as well. GDP increases to a higher amount than the average does. The standards might be on a higher level and the whole production cycle is more efficient and caused to that also faster so that there will be more products to export. (Windhagen et al., 2017)

6. CONCLUSION

To summarise the foreign trade surplus is a large topic with many different aspects and influences. As it might seem like a pure advantage for the country, this paper showed the difficulties and also the controversy concerning it. Especially in relationship to the EU the surplus is a big issue. While Germany profits from the weak euro, the southern European countries struggle with financial crisis. Caused to this other European Union member countries won't be able this much to invest in German goods and services. To prevent this, Germany also has to import from these countries to influence their trade balance as well in a positive way. At least it will be even more important in the future to invest the money which is earned by the surplus in the own country. First of all it could improve the standard of living in Germany, by investing in the transportation and in the educational infrastructure. In addition

to that, the raise of the educational level of the population might lead to higher qualified employees. This will be important to build up industry 4.0. Next to the educated workforce it will be also necessary to invest in new technologies. As mentioned for example a well working broadband which is already more improved in other high developed countries. German companies, especially the international ones should improve their technologies for example in data use. Furthermore these investments would ensure the German competitiveness even for the future and stabilize the whole economy in case of any crisis. One of these future problems might be the Brexit. The consequences of this referendum might affect the German economy in a bad way even it will be only for short-term. Also the governmental power in certain cases will be important to support the development for instance in the case of industry 4.0 as well as in the case of higher wages by introducing a new minimum wage for example.

LITERATURE:
1. Bernanke, B. (2017). *Germany's trade surplus is a problem*. [online] Brookings. Available at: https://www.brookings.edu/blog/ben-bernanke/2015/04/03/germanystrade-surplus-is-a-problem/ [Accessed 23 Nov. 2017].
2. https://de-statista-com. (2017). *Trade Account Balance Germany*. [online] Available at: https://de-statista.
3. com.ezproxy.hwr.berlin.de/statistik/daten/studie/185504/umfrage/handelsbilanzsaldoin-deutschland-nach-monaten-bereinigt/ [Accessed 23 Nov. 2017]. Grafik
4. De-statista-com.ezproxy.hwr-berlin.de. (2017). *HWR Berlin - EZproxy*. Available at: https://de-statista-com.ezproxy.hwrberlin.de/statistik/studie/id/7411/dokument/aussenhandel-von-deutschland-statistadossier/ [Accessed 3 Dec. 2017]
5. Encyclopedia Britannica. (2017). *Brexit: The U.K. Votes to Exit the EU: Year In Review 2016 | Brexit*. [online] Available at: https://www.britannica.com/topic/BrexitThe-U-K-Votes-to-Exit-the-EU-2075293 [Accessed 1 Dec. 2017].
6. Evans-Pritchard, A. (2017). *Germany's record trade surplus is a bigger threat to euro than Greece*. [online] Telegraph.co.uk. Available at: http://www.telegraph.co.uk/finance/comment/ambroseevans_pritchard/11584031/Germanys-record-trade-surplus-is-a-bigger-threat-to-euro-than-Greece.html [Accessed 23 Nov. 2017].
7. Jan Bartodziej, C., Jan Bartodziej, C. and Consulting, D. (2017). The Concept Industry 4.0 | SpringerLink. [online] Link.springer.com. Available at: https://link.springer.com/content/pdf/10.1007%2F978-3-658-16502-4.pdf [Accessed 2 Dec. 2017].
8. Lexicon.ft.com. (2017). Trade Surplus/Deficit Definition from Financial Times Lexicon. [online] Available at: http://lexicon.ft.com/Term?term=tradesurplus%2Fdeficit [Accessed 1 Dec. 2017].
9. Neuhaus, Carla (2017). *Warum ein hoher Exportüberschuss zum Problem werden kann*. [online] Tagesspiegel.de. Available at: http://www.tagesspiegel.de/wirtschaft/kritik-an-deutscher-wirtschaftsbilanz-warumein-hoher-exportueberschuss-zum-problem-werden-kann/19697406.html [Accessed 23 Nov. 2017].

10. Patel, O. and Reh, C. (2017). *Brexit: The Consequences for the EU's Political System*. [online] Ucl.ac.uk. Available at: http://www.ucl.ac.uk/european-institute/eipublications/cu-briefing-two.pdf [Accessed 1 Dec. 2017].

11. Rieth, M., Michelson, C. and Piffer, M. (2017). *Uncertainty shock from the Brexit vote decreases investment and GDP in the euro area and Germany*. [online] Econstor.eu.Available at: https://www.econstor.eu/bitstream/10419/144934/1/865948062.pdf [Accessed 1 Dec. 2017].

12. Schoof, U., Peterson, T., Aichele, R. and Felbermayr, G. (2017). *Brexit – potential economic consequences if the UK exits the EU*. [online] Bfna.org. Available at: http://www.bfna.org/wp-content/uploads/2017/04/Brexit-potential-economicconsequences-if-the-UK-exits-the-EU.pdf [Accessed 1 Dec. 2017].

13. Statistisches Bundesamt. n.d. Entwicklung der Reallöhne, der Nominallöhne und der Verbraucherpreise in Deutschland von 2008 bis 2016 (gegenüber dem Vorjahr)*.

14. Statista. Zugriff am 24. November 2017. Verfügbar unter https://de.statista.com/statistik/daten/studie/384228/umfrage/entwicklung-derrealloehne-nominalloehne-und-verbraucherpreise-in-deutschland/.

15. Windhagen, E., Bughin, J., Mischke, J., Baur, C., Mattern, F. and Forman, S. (2017). *Driving German Competitiveness In The Digital Future*.

16. McKinsey & Company. Available at: https://www.mckinsey.com/. ../Stimulating%20digital%20adoption% [Accessed 3 Dec. 2017].

17. World Economic Forum. (2017). *What would Brexit mean for Germany?*. [online] Available at: https://www.weforum.org/agenda/2016/04/what-would-brexit-mean-forgermany [Accessed 2 Dec. 2017].

FORMS OF ACTION BY THE ADMINISTRATION: ADMINISTRATIVE ACT, ADMINISTRATIVE CONTRACT AND MATERIAL ACTIONS

Thomas Chatzigagios
Department of Accounting and Finance
University of Macedonia, 156 Egnatia street,
Thessaloniki, 54006, Greece,
lyrkat@gmail.com

Stylianos Mavridis
Department of Accounting and Finance
University of Macedonia, 156 Egnatia street,
Thessaloniki, 54006, Greece,
st.mavridis@yahoo.gr

ABSTRACT

Private law is unable to express the principal relationship among the citizen and the state. The state needs forms of expression its authority. Namely, the administration is bounded to choose one of the existing types of action in order to avoid arbitrary. These are: the administrative act, the transnational administrative act, the administrative convention, the material acts and the informal act. The administrative act became a way of the state's public authority to express. Particularly, the administrative act is an exhibition of the action of the executive function. As correctly has been marked the administrative act is a creation of the meaning of the rule of law Before the dominance of the rule of law, the administrative bodies actions didn't subject to the law, and the bodies acted according to their volition, id est, arbitrarily. The European edifice, however, would remain interrupted if the legal effects of an administrative act that is published in a specific member- state, couldn't develop commitment towards the rest member-states of the European Union. For this reason was consented the meaning of the transnational administrative act by German theorists.. It is about the administrative authorities act of a member- state (issuing state) during the exercise of public authority, in order to regulate the relationships that are within the scope of the Community law and which develops its results outside the legal order of its publishing, id est. within the rest member- states of the European Union .This kind of acts aim to remove the obstacles to the realization of the Community Freedoms, resulting from the differences of the legal orders of the member states, without being necessary the harmonization of the legal orders in detail[1]. These are acts of overriding will and are distinguished from other acts of public administration in that they are drawn up by the concurrence of the wills of two or more legal persons exercising public authority or a legal person exercising public authority and individuals. In the field of private law, the Convention is the main source of contractual relations as the modern exchange economy finds the contract the most appropriate legal instrument, but in the sphere of administrative law the administrative convention as a dynamic administrative phenomenon additionally fulfills the principle of administrative efficiency for the benefit primarily of the citizens who are no longer the subject of administration. Material acts constitute a required tool of the administration, so among the rule of law, as among the social state and especially for the evolution of the providing administration, as Jellinek pinpoints as well. From the 19th century already, the administration didn't exclusively act with coercion, but in certain cases asked for an informal understanding with businesses as well.

---

[1]Gerontas, The transactional administrative act, A.Law, 2004, p.281 et seq.

This practice, however, is underestimated among the administrative science, which program was mainly the administrative domestication and the legal provisions of the administrative actions. Under these conditions, the Informal act is appeared. Typical case, is the law of the environment's protection, and the law of the water protection, where the administration seems to be based on informal transactions of exchanging with the stakeholders and the businesses in order to achieve the law enforcement. The objective of this paper is to present the various forms by which the state expresses its power and willingness.
Keywords: *public administration, forms of action, administrative law*

1. INTRODUCTION
The public administrative action is determined by law. The variety and broadness of the administrative actions sectors belong as well in the administrative law science as in the administrative science research[2]. Furthermore, the systematization and the inclusion of the administrative acts in certain types, have two main functions[3]: First of all, it has a rationalization operation, because every administrative act isn't considered from the outset as to its essential and formal attributes, but it is included into one of the forms of action that already are configured, so that those who enforce the law can readily draw conclusions. Secondly, it accomplishes legal function as well. Namely, the Administration is bounded to choose one of the existing types of action in order to avoid arbitrary solutions.

2. THE ADMINISTRATIVE ACT
The administrative act's provenance comes with the liberal state. Private law is unable to express the principal relationship among the citizen and the state. The administrative act became a way to express the state authority. Particularly, the administrative act is an expressing of the action of the executive power. As correctly has been marked the administrative act is a creation of the meaning of the rules of law[4]. Before the dominance of the rule of law, the administrative Authorities actions didn't subject to the law, and the State via Authorities acted according to their volition, id est, arbitrarily. After the establishment of the rule of law, the Administration is subject to the law has to obey to the law and the acts that issues are based in them, having bilateral commitment. Firstly, the citizen is committed by them, under the meaning that the material actions to which it will proceed in order to accomplish the content of the administrative act must be directed by the rules that it sets out secondly, they commit the Administration under the meaning that it has to act according to the content of the act, and its Authorities must not proceed to material actions contrary to the content of the act that has been issued. It is highlighted that the publication of the administrative acts usually precedes the material actions. This principle, constitutes a conquest of the contemporary law- stated policy (for example the obligatory tax recovery, cannot take place if the act of the certification of the tax doesn't precede). The administrative act is a main mean of controlling the Administration. By this, the obligations and the rights of the state and citizens are defined. Practical, it is the most important constitutionally disciplined form of the action of the Executive power to the Legislative power. The legal system provides a powerful and effective design tool, which allows to the State to do an accurate control.

---

[2]G. Papachatzis, The current system of the administrative law in Greece, Athens, 1965, p.477.
[3]I.Mathioudakis, The civil liability of the state's institutions material actions according to the articles 105-6 Introductory Law of the Civil Law, p.42.
[4]See for example M. Stasinopoylos, Courses of the administrative law (Athens 1957), p.215. The author links the administrative act with the principle of Legality that is driven out of the administrative act and imposes the subordination of the public Administration to the law. The principle of legality approach G. Papachatzis, The current system of the administrative law in Greece, volume 1, sixth edition (1983), p.587 n. and D. Korsos, Introduction of the administrative law, volume A', part A' (Athens 1977), p.76 et seq.

As long as there is the administrative act as a form of action and source of justice, there are also different types of administrative act that operate as acting, controlling and planning instruments. The basic advantage of the administrative act as a way of the administrative action constitutes the possibility of its self- issue. Furthermore, the unilateralism, its validity regardless of any deficiencies and its endurance during the time are advantages. Moreover, the fact that the administrative act unites the Administration equally to the citizens constitutes an important factor. It clarifies the basic law in some specific cases and seeks to protect the trust of the citizens. Because of these characteristics the dominance of the Administration is manifested fortiori with the publication of the administrative act. However, the contemporary rule of law and state of providence, the lack of flexibility of the administrative act rises to the basic disadvantage of this way of administrative action, making the last even ineffective. Indeed, the administrative act fails to adapt to different circumstances serving strictly the principle of legality[5]. For this reason, in the specific fields the administrative action mostly develops through either administrative contracts or material actions.

3. THE TRANSNATIONAL ACT

The European edifice, however, would remain incomplete if the legal effects of an administrative act that is issued in a specific member- state, couldn't develop effects towards the other member- states of the Union. Particularly, freedom of establishment, training, transportation of both goods and merchandise, and generally all the fundamental rights that have been recognized to whoever brings the European citizenship, would remain unfulfilled. For this reason was established the concept of the transnational administrative act by German theorists[6]. According to the German theory, the transnational act is a legal form, which is in the way of dogmatic elaboration. Specifically, from the beginning of 1990 the German theory identified the gradual formation of a new legal form which is called transactional or cross-border act. It is about the administrative act issued by the Authorities of a member- state (issuing state) during the exercise of its authority, in order to regulate the relationships that are within the scope of the Community law and which develops its effects outside the legal order of state of issue, id est. within the territory of other member- states of the European Union. This kind of acts aim to remove the obstacles to the realization of the Community Freedoms, resulting from the differences of the legal orders of the member states, without being necessary the harmonization of the legal orders in detail[7]. Because it is not compatible with the content of the four basic principles of freedom in the EU that the activities of the European citizens with implement one of these Community freedoms, in order to produce effects in the other- all-members. It is meant to be approved in these. The transactional administrative act comes to remedy this problematic, since according to it there is only one authorization for the development of a specific activity through the entire Community territory, due to the fact that its approval does not only has results at a national level.

4. THE ADMINISTRATIVE CONTRACT

Among the legal acts of the public Administration are also the bilateral public-law acts of this kind, namely the administrative contracts. These are acts of overriding will and are distinguished from other acts of public administration in that they are drawn up by the concurrence of the wills of two or more legal persons exercising public authority or a legal person exercising public authority and individuals[8].

---

[5]W.Hoffman- Riem, Grundlagen des Verwaltungsrechts, II, p.1034.
[6]J. Becker, Der transnationale Verwaltungsakt, DVBI 2001, p.855.
[7]Gerontas, The transactional administrative act, A.Law, 2004, p.281 et seq.
[8] Spiliotopoulos, as above, n. 182 et seq.

The administrative contracts are in our fashion, as Gaudemet observes. In the last few decades, there is a strong practical interest from public authorities in employing outsourcers to acquire products or services. In fact, recourse to the use of the form of a public contract is a powerful attraction not only for the national legislator but also for the EU legislator, which requires increased transparency and objectivity[9]. In Greece, this phenomenon has developed an ever increasing political, economic and social importance, since with the addressing of public Authorities to objective and transparent public procurement procedures. Namely, through open or closed competitions[10], the Greek state achieves, on the one hand, to maintain a sound financial management of financial shortfalls[11], in the sense of sound management of finite public resources, as constitutionally protected legal Party does not ensure the best satisfaction of citizens[12]. Today's needs, in contrast to earlier times, the modern state develops intense and multifaced activity on economic development and alleviate social contradictions through the uplifting of citizens living's standards. Management assumes the responsibility of organizing and operating a variety of public services, resulting in the shifting of weight from restrictive to provisioning[13]. The modern sovereign Administration partially abandons the unilateral Administrative act and resorts to the bilateral administrative act, in order to regulate legal and factual situations[14], so that this contractal public-sector cooperation with the world of individuals takes on the characteristics of the particular mode of administrative action, with a strong democratic character and efficiency, to talk about government by contract[15]. Under French law in particular, Gaudemet observes that contractual policy, the ideology of the convention goes beyond the limits of the contract itself. This two-fold modern trend of activation of the law of administrative contracts and the promotion of contractual ideology at the expense of the unilateral administrative act constitutes a great innovation, a real upheaval in French administrative law[16]. This tendency today is geared towards promoting conventional methods of administrative action as an alternative form of administrative action and the ever-increasing decline of the traditional form of exercise of public authority through unilateral administrative acts. Although the unilateral administrative act is the most frequent form of legal action of the public Administration, modern sovereign administration uses the instrument of the administrative contract to bring legal consequences, especially when it comes to harmonizing opposing interests, creating legal situations or avoiding the use of unilateral action[17]. The advantages of an administrative contract as a mean of action by the Administration are that it allows dialogue, mutual influences, timely agreement, reduces administrative costs, directs the

---

[9] See for example, E. Trova, Community Law on Public Procurement and the Law of Liberalization of International Trade, Sakkoulas, 2000.

[10] See also in St. Mavridis the conditions for recourse to the negotiation process, which is an excellent procedure, since the open and closed tendering procedure ensures wider publicity and the selection of the most advantageous tender, Public Procurement and University in the new institutional framework, Sakkoula, 2014 , p. 101 et seq.

See judgment of the French Constitutional Court No 86-207 DC of 25 and 26 June 1986 and No 86-217 DC of 18 September 1986.

[11] D. Raickos, Public Procurement Law, Sakkoula Publishing House, 2017, p. 1.

[12] See also J. Symeonidis, The nature of the acts of legal entities governed by private law in the public sector, Sakkoula, 1991, p. 25.

[13] For the administrative contract as a mean of pursuing economic policy, S. Fologitis, Modern Presentations of Foreign Intervention, 1984, p. 41 et seq.

[14] For the administrative convention as a means of pursuing economic policy, S. Flogaitis, Modern aspects of state interventionism, 1984, p. 41 et seq.

[15] WadeH.W.R. – ForsythC.F., Administrative law, 10th edition, Oxford University Press, 2009, p. 43-44. Vincent Jones P., The new public contracting regulation, responsiveness, relationality, Oxford University Press, 2006, p. 3 et seq.

[16] Gaudemet, Administrative Contracts: Modern developments in French law (Gogos, Prevedourou, Kyritsaki), Public Procurement Agreements and State Aid 3/2004, p. 222.

[17] A. Gerontas, Public Works Law, Sakkoula Publications, 2009, p. 2 et seq.

purpose, avoids conflicts and facilitates control. It creates incentives for adherence to the rules of administrative law, takes account of the complexity of administrative action, and treats legal relationships flexibly, and in general the contract can positively influence the relationship between the Administration and the individual. The need to adapt the state to the ever-changing economic and social conditions has made it possible gradually to establish the contract as a parallel to the unilateral act of administrative action, at least equivalent to the first. The administrative contract as a flexible mean of pursuing specific objectives of public interest substantially improved the effectiveness of the state in critical areas of social and economic life[18].Therefore, it is not surprising to note that the administrative contract as an expression of a public private partnership has in the meantime evolved into a self-evident, necessary and ever-expanding mechanism of action of modern public Administration. At the same time, there is a growing need to seek new forms of action and energy that will be based on cooperation and partnership[19]. In the field of private law, the contract is the main source of contractual relations as the modern exchange economy finds the contract the most appropriate legal instrument. However, in the sphere of administrative law the administrative contract as a dynamic administrative phenomenon fulfills additionally the principle of administrative efficiency primarily for the benefit of the citizens. The later are no longer the subject of administration and are therefore simply governed, ie subject to administrative superiority and administrative the intrusion of its organs, but counterparties and parties to it. The establishment of bilateral legal acts is intended to achieve the general objectives of the public Administration, namely to ensure that the public service mechanism functions as efficiently as possible. The observation that sometimes the management's Administration is more successfully conducted through administrative contracts instead of issuing executive acts unilaterally by the Administration has made them very common in modern public life. So the Administration manages its affairs in a conventional manner. Instead of imposing a unilateral power of will, it considers it more effective to contradict the ruled ones. However, it still exercises public authority in such cases. That is why the contracts are made up of exceptional clauses that retain the leading position of the state[20]. Finally, it should be noted that the legal form of the administrative contract is historically linked to the withdrawal of private law from the sphere of social legal relations and its substitution from the rules of public administrative law. Thus, in the middle of the 20th century, under the influence of the ideas of the social rule of law, the gradual increase of the sphere of application of the rules of public law and, respectively, the curtailment of that of private law. This phenomenon was characterized by science as transformation of private law into public.

5. THE MATERIAL ACT
It is strongly supported that the material action was the dominant form of action among the police state, where the administration action is limited only in internal orders and using of ways in order to fulfill the purposes of the state. Nevertheless, this consideration is wrong. Material act constitute a required tool of the Administration, so among the rule of law, as among the social state and especially for the evolution of the providing administration, as Jellinek pinpoints as well. The material act's advantage is the possibility to make legal situations come true. Primarily, without the material acts the social state would be impossible to operate. Indeed, the services of general interest, provision of goods to the administrators with the form of public

---

[18] Indicatively: K. Remelis, The Compromise in the Administrative Procedure, 1994, p. 136 et seq.
[19] Gerontas, in Gerontas, Lytras, Pavlopoulos, Sioutis, Flogaitis (collective work), Administrative Law, 2nd ed., Sakkoula, 2010, p. 247.

[20] Papachatzis, as above., p. 708 et seq

enterprises, become true with material acts[21]. Another advantage is the possibility to adapt it in each and every situation and evaluation of the particular circumstances. The basic minority of the material act, however, is the lack of coding them from the relevant legislation, in order to provide large possibility of the administration's arbitrariness and performing incidents of corruption. The material acts are related to the informal administration action as a form of administration action, as well.

6. THE INFORMAL FORMS OF THE ADMINISTRATIVE ACTION
The informal administrative action as a meaning is not something new. From the 19th century already, the Administration didn't exclusively act with coercion, but in certain cases asked for an informal understanding with businesses as well. This practice, however, is underestimated among the administrative science, which program was mainly the administrative domestication and the legal provisions of the administrative acts. Two basic evolutions in the case law prepared the conditions for the informal administrative action. The one, id est, the converting of the state into a "state of cooperation" is during the 1970 decade. The increasing responsibility for the economic prosperity of the current welfare state, obviously could not be confronted with the traditional regulatory instruments. This observation was later expressed with the large state-run (public) works in order to stimulate the economy. Secondly, the adjustment of administrative sciences drew, at the same time, its attention to the implementation of the legislation into the new surroundings and generally, into the inefficiency of the established forms of action[22]. Typical case, is the law of the environment's protection, and the law of the water protection, where the Administration seems to be based on informal transactions of exchanging with the stakeholders and the businesses in order to achieve the law enforcement. Therefore, many studies related to the legal requirements of the informal administrative action, in order on the one hand to achieve the improvement of government's action, and on the other hand to deal with the risks for the legality of the Administration.

7. CONCLUSION
Under the modern evolving relationship between Administration and law, the rigorous delimitation of forms of administration's action appears to be outdated. Indeed, there are areas where neither the administrative act, nor the administrative contract, nor the material actions can respond. Consequently, the traditional legal forms and the forms of Administration s action provide limited assistance to resolve the forms of the action of the Administration. Thus a modern teaching is required to redress the areas of the law where the Administration is acted. Such an example is the field of Administrative Economic Law (Telecommunications Law, Post Law, Electricity and Trains Law). In these sectors, the new regulatory tasks provide some new means to be addressed. [23]Here, on the one hand, the Administration must take the necessary measures, in order to prevent abusive behavior as a dominant position, while at the same time it allows the development of competition while ensuring the unwavering enjoyment of the above services. It should be noted that, in the light of the above findings, Article 10 of the German Code of Administration Procedure provides that the Administration is not bound to act in concrete forms of action. This is because there is a need for flexibility in order to achieve the tasks of the Administration, without the latter being obstructed by the formality of its action.In the light of all these, it is necessary to refer to the strict distinction between the possible forms of action so that the Administration can judge in each case which form it corresponds more fully to the objectives it has set. Therefore, there is a need for interdependence between the

---

[21] J. Mathioudakis, as above, p. 40.
[22] W. Hoffman – Riem, GrundlagendesVerwaltungsrechts, II, p. 1343-1344.
[23] W. Hoffman – Riem, as above, p. 943

objectives set, the best possible effects and how to achieve them. It should be noted, however, that in order to prevent arbitrariness of the Administration, it seems logical to justify the choice of this action in any case.

LITERATURE:
1. Becker J. (2001). *Der transnational Verwaltungsakt*, *DVBI*, p. 855.
2. Elder (2004). *The cross-border administrative act*, p. 281.
3. Lytras, E., Pavlopoulos P., Sioutis G., Fologitis S. (collective work). (2010). *Administrative Law, 2nd ed.*, Sakkoula Publishing House.
4. Gogos K. (2005). *The Court's Infringement of Administrative Misconduct*, Sakkoula Publishing House.
5. Gaudemet Y. (3/2004). *Administrative Contracts: Modern developments in French law* (Gogos, Prevedurou, Kyriacakis), *DPSKE*, p.
6. Hoffman – Riem W. (2008) *Grundlagen des Verwaltungsrechts II*, C.H. Beck.
7. Kitsos. (2014). *Private Public Private Partnerships and Concession Contracts*, Sakkoula Publishing House.
8. Korsos D. (1977). *Suggestions of Administrative Law*, Athens.
9. Mathioudakis. (2006). *The Civil Liability of the State from the Material Actions of its Institutions in accordance with Articles 105-6 of INNAK*, ANION.
10. Mavridis S. (2014). *Public Procurement and University in the New Institutional Framework*, Sakkoula Publishing House.
11. Papanolalaidis D. (1972). *Administrative Justice*, Sakkoula Publishing House.
12. Papanikolaidis D. (1977). *Administrative Law*, Thessaloniki.
13. Papanolalaidis D. (1992). *System of Administrative Law*, Athens.
14. Papachatzis G. (1965). *System of En Elladi, Administrative Law in force*, Athens.
15. Papachatzis G. (1983). *System of the Administrative Law in force in Greece*.
16. Rickos D. (2017). *Public Procurement Law*, Sakkoula Publishing House.
17. Spiliotopoulos E. (2011). *Handbook of Administrative Law*, published by the Law Library.
18. Stassinopoulos M. (1957). *Administrative Law Courses*, Athens.
19. Symeonidis. (1991). *The nature of the acts of legal entities governed by private law in the public sector*, Sakkoula Publishing House.
20. Trova E. (2000). *Community Law on Public Procurement and the Law of Liberalization of International Trade*, Sakkoula Publishing House.
21. Fologitis S. (1984) *Modern aspects of state interventionism*, Ed. Sakkoula.
22. Vincent Jones P. (2006). *The New Public Contracting Regulation, Response, Relationsality*, Oxford University Press.
23. H.W.R. Wade - C.F. Forsyth (2009). *Administrative law*, 10th edition, Oxford University Press.

ACCOUNTING EDUCATION FOR BETTER EMPLOYMENT - CASE STUDY IN CROATIA

Vlasta Roska
University North, Koprivnica, Croatia
vlasta.roska@unin.hr

Ivana Martincevic
University North, Koprivnica, Croatia
ivana.martincevic@unin.hr

Vesna Sesar
University North, Koprivnica, Croatia
vesna.sesar@unin.hr

ABSTRACT
Higher education needs to adapt to the labour market in Croatia. The process of adaptation is going very slowly. For this reason, a lot of young people cannot find a job when they finished the faculty. Because of the inability to find a job, young educated staff are leaving Croatia. Some people, after a long search, have managed to work in their profession, but without sufficient knowledge of financial statements, salary, tax obligation or tax relief. Some of them do not use the incentives of the Croatian Employment Service because they do not know about it. In their education, they did not have accounting, tax, or controlling so they could not understand the elements of financial statements that, besides state administration, need and serve them for business development. New entrepreneurs also engage in business with EU countries or countries outside the EU, without the minimum knowledge of tax liabilities. The introduction of controlling enables them to better understand and develop the potential of companies. These are just some of the subjects of accounting education that all students should need to have in their university education. However, these subjects have only a few faculties or departments at universities, how is shown by research. The basic aim of the paper is to show that students of other department or faculty than accounting and finance, also become aware of the importance of accounting, taxation and controlling as the essential needs of the general culture to improve they business and private life. That subjects have provideed certain advantages in better exploitation of business opportunities and employment. Such subjects, except for the management of their own society, give certain security of employment to students after completing their education. Students with knowledge of accounting, taxation and controlling can easily collect relevant information about a future employer, understand the financial statements or their salary. The papier has proved that students become aware of the importance of accounting, taxation and controlling as the essential needs of the general culture to improve they business and private life.
Keywords: Accounting, Controlling, Tax, Higher Education

1. INTRODUCTION

Economic and cultural globalization has created new challenges for higher education system since it requires global openness and knowledge exchange. Croatia is still one of a few countries in Europe that still has higher unemployment rates that arre at two-digit level. In the country is visible a clear correlation between the level of education and employment rate. Normally higher levels of education contributes to a higher rates of employment (CAE, 2017, p.27). Bilten states (CEA, 2017, p.30) that students who finished business economics, accounting and auditing department find jobs easier because the recruitment of those students is noticeable

higher then in other areas. On the other hand, the slowest recruitment was beetween groups of students who finished general economy. Many young, educated people, everyday leaves Croatia because of the general economic situation and inability to find a job. Higher education needs to adapt to the labour market in Croatia. Some people, after a long search, have managed to work in their profession, but without sufficient knowledge about financial statements, salary, tax obligation or tax relief. Many of them do not use the incentives of the Croatian Employment Service because they do not know about it. In their education, they did not have accounting, tax, or controlling so they could not understand the elements of financial statements that, besides state administration, need and serve them for business development. These are just some of the subjects that all students should need to have in their university education. However, these subjects are held only on few faculties or departments at certain Universities. The basic aim of the paper is to show that students that don't study filed of accounting and finance, are also becoming aware of the importance to gather knowledge from accounting, taxation and controlling and perceive those subjects essential to improve they business and private life. Mentioned subjects provide certain advantages regarding better exploitation of business opportunities and employment.

2. ACCOUNTING EDUCATION FRAMEWORK
Accounting education does not mean only accounting or bookkeeping, that means also deep understanding of financial statement, taxes and controlling.

2.1. The importance of accounting in higher education
In today's modern business, the importance of knowing the issues and areas of accounting is indisputable. As the center of information necessary for business management and making business decisions, accounting is an inexhaustible source of information. Accounting as a source of information can provide the company competitive edge on the market as well as quality and further continuous development of the company. Knowledge in the area of accounting is important whether individuals are engaged in sales, procurement, and accounting and top management. Managing business and being competitive is inconceivable without adequate support from acounting and information provided by accounting. Today's formal academic education in the field of accounting is necessary for those who are being educated in the field of economy but also for those who are educated in another area, but having the knowledge in this area is of great importance. The labor market requires a lot of knowledge, employment in companies carries with it handleing and solveing many problems, making business decisions, managing a company where accounting and accounting informations are very important. Many times accounting as a course in universitys from these individuals in not accepted with the reflections and thinking about the unnecessary of such kind of courses in those studies where this is not the professional area of the individual.

2.2. The importance of taxes in higher education
Taxes are all around us. Regardless of the age, everyone has met some form of tax. It could be salaries tax, property tax, value added tax, income tax, and so on. Although Croatia has one of the highest rates of VAT, taxes are present both in business and private life. All employed citizens pay income tax, salary tax or self-employment tax. Similarly, companies at the end of each business year determine the business result and pay the corporate profit tax. New entrepreneurs start business without minimum knowledge of VAT or other king of tax liabilities, with EU countries or countries outside the EU. As Benjamin Franklin said, "In this world, nothing is certain but death and taxes are." Many entrepreneurs with unpaid taxes came to illiquidity and stop to pay salaries which automatically put their employees into illiquidity.

Therefore, today's student when they finish their higher education should know where they can check their future employer. They need to be friendly with the Tax Administration website as well as FINA pages. Those are websites when they can find informations about the tax or other obligations which companies need to pay or financial reports for future employers. Also, all those who want to open a company had to know what their tax obligations are, but also how can they get various incentives. However, in higher education taxes are often included in the filed of accounting and they are not separated as specific field, because of the general opinion that only accountants need to take care about taxes.

2.3. The importance of controlling in higher education

Controlling is a set of multidisciplinary knowledge that is necessary for those who manage companies in order to make quality decisions based on a countless data taken from and outside the company (Ocko and Svigir, 2009, p. 13). It ensures that company remains on the "right path" and supports management to be able to efficiently and effectively manage company on a daily, monthly, quarterly and annually basis. Controlling involves all business functions in the company and is oriented toward the future. If we make an analysis of a labor market demand for skills in the area of controlling (which can be easily done by analyzing job ads for positions in controlling) with the supply of controlling subject held at Universities, there is still a disproportion between the actual demand and the supply of knowledge and skills in the area of controlling held at Universities in Croatia. The fact is that our students at University recognize the need for acquiring new knowledge and skills learned in controlling subject which represent an upgrade of knowledge learned at courses such as accounting and finance. Benefits from acquiring valuable skills and knowledge from subjects mentioned earlier can be analyzed from the aspect of advantages that students get in business and in private life. With the knowledge gained in the field of controlling, students understand overall picture of business processes and necessity to continuously follow market trends in everyday uncertain environment. Students also see private benefits from this courses and use acquired skills when planning their home budget or when they choose to start their own businesses.

2.4. Previous research in educations

Accounting is a business language, which business comunity needs to understand. Business comunity includes not only accountat but also people working in sales, marketing or other economic activities who work like employees, managers or owners. Terms such as equity, assets, and balance sheet are part of the accounting meta language. The results of the pre-test assignment suggests that students' level of understanding of the meta language of accounting is fairly low (Elson, O'Callaghan, Walker, Williams, 2013, p. 4). In addition to financial literacy, accounting literacy is also of a great importance, encompassing the understanding of accounting indicators, which include the knowledge of bookkeeping. The research of Pavković showed that most respondents believe that better accounting knowledge would allow better financial situation (Pavković, 2017, p. 44). The research in the graduate thesis (Pera, 2017, p.35-37) confirmed that top ranking companies have managers who know accounting well, and the smallest those who have considered their knowledge sufficient. Also, the largest number of respondents believe that management and decision making can not be imagined without accounting information. In rapidly changing job markets, higher education systems should provide graduates with relevant skills and competences and all faculties need to improve their educational service quality (Štimac, Leko Šimić, 2015, p.9). According to the Popopvić Filipović (2017): „Regardless of geographical position and economic development, financial planning and budgeting, financial accounting, and so on, soft skills are needed for all young people who are just beginning or have already begun their working life. The aim of the study, involving 500 respondents from business communities across Europe, was to determine which

financial skills and competences of young people are needed for the 21st century business community, regardless of whether they start their own business or hire a company. The main finding of the research is that there is a big gap between financial knowledge and skills (what is called financial literacy) that young people have and those that employers need." Accounting and Finance literacy is a key factor for successful entrepreneurial projects" (Trombertta, 2016). In the research of Europien Union (Bartlett, 2016, p.9) is pointed out that many graduates in the Western Balkans have a precarious entry to the labour market and often experience periods of unemployment before they find stable employment. Only 48% of graduates are vertically well matched to the skills required by the job they hold by the level of their qualification, about 35% of graduates are horizontally mismatched in relation to their field of study. Looking from the aspect of business, employers seek students with certain skills because they are aware that these students can apply specific knowledge in practice. Students with those specific skills have advantage in the labor market. The results of a recent research done by Meter and Sarcevic (2017) have shown that in Croatian companies more often are used operational instruments (average point of 3,2 on a 5-point Likert scale), while use of strategic instruments is more rarely (2,4 average point on a 5-point Likert scale). Also, findings from the same research show that with the increase of education level, increases the application of controlling instruments (Meter and Sarcevic, 2017, p. 19). At the Forum of Finance for Everyone- financial education for a better life in all parts of Croatia that was held in February 2018, was pointed out that our educational system needs to start education about Financial literacy from elementary school.

3. THE GOALS, BASIS, AND HYPOTHESIS OF THE RESEARCH

The basic aim of the paper is to show that students that don't study filed of accounting and finance, are also becoming aware of the importance to gather knowledge from accounting, taxation and controlling and perceive those subjects essential to improve they business and private life. Mentioned subjects provide certain advantages regarding better exploitation of business opportunities and employment. The research was conducted on the students of University North. The sample included students who study economics (but not of accounting and finance) and the filed of management and interdisciplinary filed of logistics. Table 1 shows departments of University North that were included in the research. It is visible that students have education in accounting, but only Departmet of Technical and Economics Logistics has accounting, tax system and controlling covered. From the total number of students 36% of them answered survey questionnaire.

Table 1 Accounting subjects on University North (Authors)

DEPARTMENT	STADY	ACCOUNTING	SEMES./STUDENTS	C/E	TAXES	SEMES./STUDENTS	C/E	CONTROLLING	SEMES./STUDENTS	C/E
Technical and Economic Logistics	undergraduate professional study	ACCOUNTING	3 S/ 50 ST.	C	TAX SYSTEMS	5 S /50 ST.	C 1/2	CONTROLLING	5 S/50 ST.	C 1/2
Business and Management	undergraduate professional study	ACCOUNTING	4 S/86 ST.	C						
Business Economics	graduate university study	BUSINESS ACCOUNTING	3 S/ 52 ST.	E				CONTROLLING	1S/77 ST.	E
		FINANCE AND ACCOUNTING	1 S / 48 ST.	D						
Sustainable Mobility and Logistics	graduate university study	FINANCE AND ACCOUNTING MENAGMENT ACCOUNTING	4 S	E				BUSINESS ANALYSIS	3	C

The statistical hypothesis for confirming set aim are:

- H1= Students are aware of the usefulness of accounting education in their private and business life
- H2 = There is statistically significant correlation between student characteristics (gender, employment, working experience, status, study, year of study and department) and their opinion about the need of accounting subjects that are not directly related to their professions (Q8),
- H3 = There is no statistically significant correlation between student characteristics (gender, employment, working experience, status, study, year of study and department) and the importance of accounting subject in their private and business life (Q9, Q10).

For the statistical analysis, this paper uses dscriptive analysis and analysis stemming from correlation coefficients to examine interdependencies. Also, it was used Likert scale from 1 to 5, where 1 meaning „do not necessary at all" to 5 meaning „ life-needs". The statistical study used the software package SPSS 24.

4. RESULTS OF RESEARCH
Table 2 represents the review of courses held on Faculties and departments in the filed of economics including all Croatian universities, public and private. In this research we excluded Department of accounting and audit which has those subjects per se. In the analysis were included all subjects regarding accounting (basic, financial, management and so on), taxes (VAT, CIT, IT or public finance) and controlling (controlling, analysis or budgeting).

Table following on the next page

Table 2 Accounting, tax and controlling education on Croatian Universities (Authors)

UNIVERSITIES	STADY	ACC.	C/E	TAX	C/E	CON.	C/E
UNIVERSITY NORTH, KOPRIVNICA							
Technical and Economic Logis	UPS	YES	C	YES	C 1/2	YES	C 1/2
Business and Management	UPS	YES	C	NO		NO	
Business Economics	GUS	YES	E	NO		YES	E
Sustainable mobility and logist	GUS	YES	E	NO		YES	E
UNIVERSITY ZAGREB							
FACULTY OF ECONOMICS AND BUSINESS							
Business planning and analysi	IUAGUS	YES	C	YES*	E	YES	C
Finance	IUAGUS	YES	C	YES	C	YES*	E
Marketing	IUAGUS	YES	C	YES*	E	YES*	E
Management	IUAGUS	YES	C	YES*	E	YES*	E
Managerial Informatics	IUAGUS	YES	C	YES*	E	YES*	E
Trade	IUAGUS	YES	C	YES*	E	YES*	E
Tourism	IUAGUS	YES	C	YES*	E	YES*	E
Economics	IUAGUS	YES	C	YES	E	YES	E
FACULTY OF ORGANIZATION AND INFORMATICS							
Economics of Entrepreneurshi	UUS	YES	C	YES	C	YES	C
Information and Business Syst	UUS	YES	C	NO		YES	E
Economics of Entrepreneurshi	GUS	YES	C	NO		YES	E
Graduate studies in informatic	GUS	NO		NO		NO	
Information Technology in Bu	UPS	YES	C	NO		YES	C
Josipa Jurja Strossmayera UNIVERSITY Osijek							
DEPARTMENT FOR CULTURAL STUDIES							
CULTURAL MANAGEMENT	UUS	YES	C	NO		NO	
FACULTY OF ECONOMICS							
Entrepreneurship	UUS	YES	C	NO		NO	
Economic policy and regional development	UUS	YES	C	YES	C	YES	C
Financial management	UUS	YES	C	YES	C	YES	E
Marketing	UUS	YES	C	YES	C	YES	E
Management	UUS	YES	C	YES	C	YES	E
Business informatics	UUS	YES	C	YES	C	YES	E
Financial management	GUS	NO		NO		NO	
Marketing	GUS	NO		NO		NO	
Management	GUS	YES	C	NO		NO	
Business informatics	GUS	NO		NO		YES	C
Enterpreneurial Management and Enterpreneurship	GUS	YES	C/E	NO		YES	C
Business economy and regional development	GUS	NO		NO		NO	
Trade and logistics	GUS	NO		NO		YES	C
UNIVERSITY VERN							
Business Economics	UPS	YES	C/E	NO		YES	C
Enterpreneurial Management	UPS	YES	C/E	YES	C	YES	C
Business IT	UPS	YES	C	NO		NO	
Technical Management	UPS	YES	C	NO		NO	
Tourism – Tourist and Hotel Management	UPS	YES	C	NO		NO	
Destination Tourism – Tourist and Hotel Management	UPS	YES	C	NO		NO	
Managing Sustainable Tourism Development	UPS	NO	C	NO		NO	
Enterpreneurial Management	GUS	YES	C	NO		YES	C
Human Resources Management	GUS	NO		NO		YES	C
Managing Business Communication	GUS	NO		NO		NO	

UNIVERSITIES	STADY	ACC.	C/E	TAX	C/E	CON.	C/E
UNIVERSITY RIJEKA							
FACULTY OF ECONOMICS							
Integrated undergraduate and graduate university studies.							
Economics	UUS	YES	C / E	NO		NO	
Business Economics/IT Business	UUS	YES	C/E	NO		NO	
Business Economics/Management	UUS	YES	C/E	NO		NO	
Business Economics/Entrepreneurship	UUS	YES	C/E	NO		NO	
Business Economics/Finance and Banking	UUS	YES	C/E	YES	C	NO	
Business Economics/Marketing	UUS	YES	C/E			NO	
Business Economics/International Business	UUS	YES	C/E			NO	
Economics / Economy of the EU	GUS	YES	E	YES	E	NO	
Economics/ Economy of development	GUS	NO		YES	C/E	NO	
Business Economics/ Management	GUS	YES	C/E	YES	E	YES	C
Business Economics/ Finance and Banking	GUS	YES	C/E	YES	C/E	YES	C
Business Economics/ Marketing	GUS	YES	C/E	YES	E		
Business Economics/ International Business	GUS	YES	C/E	YES	E		
Business Economics/ IT Business	GUS	YES	C/E	YES	E		
FACULTY OF TOURISM AND HOSPITALITY MANAGEMENT							
Business Economics in t	UUS	YEA	C/E	YES	E	YES	C/E
Management of Sustaina	UUS	YES	C/E	YES	E	YES	C/E
JURJA DOBRILA UNIVERSITY, PULA							
Economics	UUS	YES	E	NO		NO	
Finanacial Manageme	UUS	NO		NO		NO	
Management and Ent	UUS	YES	C	NO		NO	
Marketing Manageme	UUS	YES	C	NO		NO	
IT Business	UUS	YES	C/E	NO		NO	
Tourism	UUS	NO		NO		NO	
Economics	GUS	NO		NO		NO	
Finanacial Manageme	GUS	YES	C/E	NO		NO	
Managament and Ent	GUS	YES	E	NO		NO	
Marketing Manageme	GUS	NO		NO		NO	
IT Business	GUS	YES	E	NO		NO	
Tourism and develoment	GUS	NO		NO		NO	
UNIVERSITY DUBROVNIK							
Economics	UUS	YES	C	YES	E	NO	
Business Economics/ Tourism	UUS	YES	C	YES	E	NO	
Business Economics/ Marketing	UUS	YES	C			NO	
Business Economics/International Trade	UUS	YES	C	YES	E	NO	
Business Economics/IT Management	UUS	YES	C	NO		NO	
Economics	GUS	YES	E	NO		YES	E
Business Economics/ Tourism	GUS	YES	E	NO		YES	E
Business Economics/ Marketing	GUS	YES	E	NO		YES	E
Economics/International Trade	GUS	YES	E	NO		YES	E
Business Economics/IT Management	GUS	YES	E	NO		YES	E

UNIVERSITIES	STADY	ACC.	C/E	TAX	C/E	CON.	C/E
UNIVERSITY SPLIT							
FACULTY OF ECONOMICS							
Economy direction	UUS	YES	C	NO		NO	
Economics Studies,	UUS	NO		NO		NO	
Undergraduate Study - Business Economy,	UUS	YES	C	NO		NO	
Undergraduate study - study Business	UUS	YES	C/E	YES	C	NO	
Undergraduate study - study Business Economy, direction	UUS	YES	E	NO		NO	
Undergraduate Study - Business Economy, Management course	UUS	YES	E	NO		NO	
Undergraduate Study - Business Economy, direction Marketing	UUS	YES	E	NO		NO	
Undergraduate study - study Business Economy, direction	UUS	YES	E	NO		NO	
study Business Economy, direction Accounting and auditing	UUS	YES	C/E	NO		NO	
Undergraduate study - study Tourism, joint courses	UUS	YES	C	NO		NO	
Undergraduate study - study Tourism, direction Management in hotel business	UUS	NO		NO		NO	
Undergraduate study - study Tourism, direction Management in tourism	UUS	NO		NO		NO	
Undergraduate study, Management of Small Busines,s joint courses	UPS	YES	C	NO		NO	
Undergraduate study, Management of Small Business, direction	UPS	NO		YES	C	YES	C
Undergraduate study, Management of Small Business, direction Management	UPS	YES	C	NO		NO	
Undergraduate study, Tourist business, joint courses	UPS	YES	C	NO		NO	
Graduate study - Business Economy, direction Financial Management	GUS	YES	E	YES	C	NO	
Graduate Study - Business Economy, Direction IT Management	GUS	YES	E	YES	E	NO	
Graduate study - Business Economy, direction Management	GUS	YES	E	YES	E	NO	
Graduate Study - Business Economy, direction Marketing	GUS	YES	E	YES	E	NO	
professional study in Management, direction	SGPS	YES	E	YES	C	NO	
Specialist graduate professional study in Management, direction Accounting and auditing	SGPS	YES	C/E	YES	E	NO	
Specialist graduate professional study in Management,direction Project management	SGPS	YES	E	YES	E	NO	
University department for Professional Studies							
Trade business	UPS	YES	C	NO		YES	C
Trade business	SPS	NO		NO		YES	C
UNIVERSITY ZADAR							
Management	UUS	YES	C	NO		YES	C
Management	GUS	NO		NO		NO	
CROATIAN CATOLIC UNIVERSITY							
NO ECONOMICS FACULTY OR DEPARTMENT							
UNIVERSITY LIBERTAS							
International Relations	UUS	NO		NO		NO	
International Business	UUS	YES	C	NO		NO	
Business Economics	UPS	YES	C	YES	C	YES	C
Tourism and Hotel Mana	UPS	YES	C	NO		YES	C
Business Security Management	UPS	YES	E	NO		NO	
Sports Management	UPS	NO		NO		NO	
Business Economics and Globalization	GUS	YES	C	NO		YES	C
* one of 126 subjects							

LEGEND:

GUS -Graduate university studies	IUAGUS -Integr. underg. and grad. Univ. st.
UUS -Undergraduate university studies	SGPS -Special graduate professional study
UPS -Undergraduate professional study	SPS -Special professional study
C-COMPULSORY COURSE	E-ELECTIVE COURSES

Accounting courses are included in higher education at all faculties. Tax courses are held only on few departments, probably because of the general opinion that those courses ahould be inculeded in the field of accounting. At least satisfying situation is with controlling course.
In the survey participated 131 students from four departments held at University North. The basic characteristic of the sample regarding departments are shown in table 3 and figure 1. According to the gender 59% are female students and 41% are male students. Regular students are 61% and 57% are unemployed students. Undergraduate professional studies attend 67% students and 33% have continued graduate university studies.

DESCRIPTION		TEHNICAL AND ECONOMIC LOGISTIC	BUSINESS AND MANAGEMENT	BUSINESS ECONOMICS	SMAL	TOTAL
GENDER	FEMALE	50,72%	73,68%	88,89%	61,76%	59,54%
	MALE	49,28%	26,32%	11,11%	38,24%	40,46%
EMPLOYMENT	EMPLOYED	33,33%	42,11%	88,89%	50,00%	42,75%
	UNEMPLOYED	66,67%	57,89%	11,11%	50,00%	57,25%
YEAR OF EMPLOY.	NO W.E.	63,77%	57,89%	11,11%	44,12%	54,20%
	LESS THAN 1	14,49%	0,00%	11,11%	8,82%	10,69%
	1 TO 5	13,04%	10,53%	55,56%	23,53%	18,32%
	6 TO 10	2,90%	5,26%	0,00%	2,94%	3,05%
	MORE THAN 10	5,80%	26,32%	22,22%	20,59%	13,74%
STATUS	REGULAR	60,87%	100,00%	0,00%	58,82%	61,83%
	UNREGULAR	39,13%	0,00%	100,00%	41,18%	38,17%
STADY	UNGRADUATE	100,00%	100,00%	0,00%	0,00%	67,18%
	QRADUATE UNIVERSITY	0,00%	0,00%	100,00%	100,00%	32,82%
YEAR OF STUDY	1.	2,90%	0,00%	88,89%	100,00%	33,59%
	2.	53,62%	0,00%	11,11%	0,00%	29,01%
	3.	43,48%	100,00%	0,00%	0,00%	37,40%

Table 3 The basic characteristics of sample (Authors)
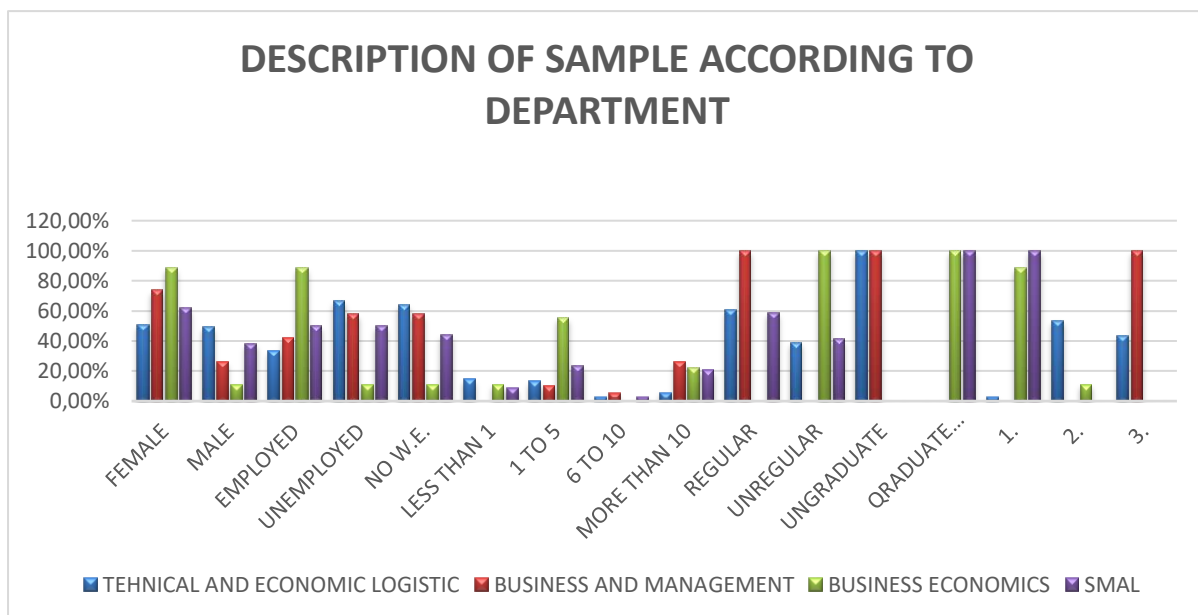

Figure 1 The basic characteristics of sample according to departmenta held at University North (Authors)

The question 8, 9 and 10 asked students' opinion on the necessity and benefits of accounting education in their private and business life. The results show that accounting courses and controlling are at the average point of 3,5 on a 5-point Likert scale and tax course are at average

point of 3,2 on a 5-point Likert scale. Results show that students see better benefits from tax course in their private life (average point of 3,4 on a 5-point Likert scale), while benefits from accounting and controlling courses are better for business life. Average point for accounting is 3,97, on a 5-point Likert scale and for controlling, average point of 3,92 on a 5-point Likert scale. Students consider very seriously the accounting subjects which can be confirmed with the fact that 66,7% of students stated that they are not learninig this subject only for better grade, but for knowledge which they belive it will use in the future. Results by department show 66,7% students are at the department of Technical and economic logistic, 52,6% at Business and Management, 77,8% at Business Economic and 70,6% at SMAL Department. On the Likert scale students have marked 3 to 5 for all three subjects. Students at the department of Business Economics have the biggest awareness about the importance of accounting subjects. The first hypothesis is confirmed. In table 4 is shown corellation between basic student characteristic (gender, employment, year of employment, status, study, year of study and department and answers to questions 8, 9 and 10. Question 8 was: Do you think that you need accounting subjects that are not directly related to your profession? Question 9 was: Do you think that knowledge from accounting subjects can be applied in private life? Question 10 was: Do you think that accounting subjects can be applied in business life?

The analysis for Q8 shows no statistically significant correlations between student characteristics and accounting course. Statistically significant correlations can be seen ($p < .05$) between student characteristic and courses as follows:
- Taxes and employment (negative correlations) r = -,214
- Taxes and year of employment (positive correlations) r = ,191
- Accounting and year of study (positive correlations) r = ,194
- Controlling and year of study (positive correlations $p < .01$) r = ,231

That confirm that employed students are aware about the importance of taxes, and that student during their educcation start to be more aware of the importances of accounting and controlling courses. Accordingly, the second hypothesis can be confirmed. In questions 9 and 10 there is no statisticy significant correlations, $p < .01$ or $p < .05$. That means that some of student characteristic do not influence their opinion that accounting education is important for their privite and business life. Accordingly, the third hypothesis is confirmed. Further, financial statements and basic rules of accounting are the most important things for students. For tax course, the most important thing for students are basic information about tax laws and VAT, because this kind of tax is important for all aspect of life and influences cost of life. Students state that the most important thing about controlling would be an emphisize on controlling of human resources and analysis of financial statement. Students opinion about what is need for learining in accounting course are more exercises, especially in accounting information systems, and in tax and controlling courses they they would like more practical work.

Table following on the next page

Table 4 The Correlations of basic sample characteristics and application of accounting , tax and controlling courses (Authors)

		Correlations								
		Q 8			Q 9			Q 10		
		ACCOUNTING	TAX	CONTROLLING	ACCOUNTING	TAX	CONTROLLING	ACCOUNTING	TAX	CONTROLLING
GENDER	Pearson Correlation	0,064	0,118	0,120	0,056	0,123	0,089	0,039	0,113	0,145
	Sig. (2-tailed)	0,470	0,178	0,174	0,526	0,162	0,311	0,659	0,200	0,098
EMPLOYMENT	Pearson Correlation	-0,139	-,214[*]	-0,059	-0,124	-0,123	-0,028	0,103	0,027	0,092
	Sig. (2-tailed)	0,112	0,014	0,501	0,157	0,160	0,747	0,239	0,760	0,297
YEAR OF EMPLOY.	Pearson Correlation	0,085	,191[*]	0,094	0,086	0,142	0,019	-0,162	-0,079	-0,157
	Sig. (2-tailed)	0,336	0,029	0,284	0,328	0,106	0,832	0,064	0,369	0,073
STATUS	Pearson Correlation	0,156	0,043	0,088	0,058	0,024	0,002	-0,131	-0,131	-0,144
	Sig. (2-tailed)	0,075	0,625	0,315	0,507	0,786	0,985	0,135	0,137	0,101
STADY	Pearson Correlation	-0,089	-0,007	-0,040	-0,020	0,041	-0,005	-0,148	-0,094	-0,083
	Sig. (2-tailed)	0,314	0,937	0,652	0,825	0,638	0,957	0,092	0,285	0,346
YEAR OF STUDY	Pearson Correlation	,194[*]	0,122	,231[**]	0,092	0,075	0,149	,183[*]	0,133	0,156
	Sig. (2-tailed)	0,027	0,165	0,008	0,298	0,393	0,089	0,036	0,129	0,075
DEPARTMENT	Pearson Correlation	-0,140	-0,159	-0,050	-0,072	-0,040	-0,012	-0,153	-0,165	-0,113
	Sig. (2-tailed)	0,111	0,070	0,573	0,416	0,647	0,891	0,082	0,059	0,199
**. Correlation is significant at the 0.01 level (2-tailed).										
*. Correlation is significant at the 0.05 level (2-tailed).										

5. CONCLUSION

Accounting courses, except for the management of their own society, give certain security of employment to students after finishing their education. Students who gain knowledge in accounting, taxation and controlling can easily collect relevant information about a future employer, understand the financial statements, their salary or their business. It is necessary for higher education institutions to cooperate more closely with labor market and research their needs and requirements. Ministy of Science and Education is planning to introduce entrepreneurship into secondary education. If this course would contain also a part of accounting education this could lay foundations for further accounting literacy development in higher education. Maybe, this would bring to better results in taking advantage from CES benefits. Today, active employment policy programs use about 31,110 persons (CES, 2018). The most popular measures are professional training for non-working people 34.2%, employment support 17.9% and self-employment support 11.8%. The results of our research have shown that Universities of Economics in Croatia have some accounting courses, but some of them do not teach about the importance of taxes and they are not practicing a "controlling"

course. A certain gap can be notices between science and business needs. It can be concluded that in higher education taxes and controlling are neglected among Universities, while in practice they are highly recognized as an important strategy that can assure long-term survival in a highly competitive environment. The research confirmed that students are aware of the importance of accounting education and the benefit they get in private and business life. For future research is necessary to see the situation of accounting education on other Faculties in Croatia rather than Economics. Knowledge today is being treated as the key factor of economic growth, and our students need to have accounting education for sucessfull future.

LITERATURE:
1. Bartllet and at. (2016). From University to Employment: Higher Education Provision and Labour Market Needs In the Western Balkans Synthesis Repor*t,* EUROPEAN COMMISSION, European Union Brussell
2. Croatian Agancy for Employment (2018): Analitički bilten, godina XIX, broj 3, Zagreb, Retrieved 07.03.2018., from http:// http://www.hzz.hr/default.aspx?id=10053
3. Elson, J. R., O'Callaghan, S., Walker, P., J., Williams, R., (2013). The meta language of accounting: What's the level of students' understanding? Journal of Instructional Pedagogies, Retrived 03.03.2018, http://www.aabri.com/manuscripts/131468.pdf,.
4. Meter, M., Sarcevic. M. (2017). Primjena instrumenata kontrolinga u praksi hrvatskih poduzeća. Kontroling u praksi: Instrumenti kontrolinga. Poslovna učinkovitost d.o.o. poslovno savjetovanje, Zagreb, p. 7-20
5. Ocko, J, Svigir, A. (2009). Kontroling- upravljanje iz backstage, Zagreb, Knjiga print d.o.o.
6. Partnership for 21st Cenutry Skills:21st Century Skills, Educations & Competitivness, A Resource and Policy Guide**,** Retrieved 27.02.2018., www.21stcenturyskills.org,
7. Pavković, D, (2017). Računovodstvena pismenost u neprofitnim organizacijama -diplomski rad, Ekonomski Fakultet Split
8. Pera, S. (2017). Obilježja računovodstvene pismenosti menadžera u mikro poduzećima – diplomski rad, Ekonomski Fakultet Split
9. Štimac, H, Leko Šimić, M. (2012). Competitiveness in Higher Education: A Need for Marketing Orientation and Service Quality**,** Retrieved 03.03.2018, https://bib.irb.hr/datoteka/610125.Competitiveness_in_HE-A_need_for_marketing_orientation_and_service_quality.pdf,
10. Trombetta, M., (2016), ACCOUNTING AND FINANCE LITERACY AND SELF-EMPLOYMENT: AN EXPLORATORY STUDY, IE Business School – IE University Retrived 03.03.2018, https://institute.eib.org/wp-content

HOUSEHOLD SOLID WASTE MANAGEMENT IN AFRICA

Karim Sabri
FSJES Ain Sebaa Casablanca – LARNED Laboratory
sabrikarimprof@gmail.com

ABSTRACT

Household solid waste management is a severe problem in big cities of developing countries. Mismanaged solid waste dumpsites lead to sanitary, ecological and economic consequences for the whole population, especially for the poorest urban inhabitants. Addressing this problem, this paper exploits field data collected in the Urban Community of Dakar, in order to rank nine areas of the city with respect to multiple criteria of nuisance. Nine criteria are built and are organized in three families representing three classical viewpoints: the production of waste, its collection and its treatment. Using the PROMETHEE method and ARGOS software, a pairwise comparison of the nine areas is performed resulting in their multiple criteria ranking, in terms of each viewpoint and then globally. Our ultimate aim is to identify the worst and best areas in terms of nuisance with the aim of better waste management in the city, fitting as well as possible with the needs of the urban community. Based on field knowledge and on the literature, general solutions to the household solid waste problems are suggested.
Keywords: *Multiple criteria analysis, Household Solid Waste Management, developing countries*

1. INTRODUCTION

In developing countries, household solid waste management (HSWM) in big cities is often a mismanaged problem that leads to bad consequences for the urban population, such as high rates of morbidity, aesthetic degradation, economic losses by flood propagation or simply by an absence of the valorization of waste through such means as reclamation and recycling. Sometimes, as in Dakar, poor people live too close to a huge landfill site. At the same time, informal activities develop around dealing with the solid waste, which can benefit some intermediaries working without official permission. Cities have tried partly to solve some of these problems by calling for foreign private companies or for NGOs to improve the collection and the valorization of solid waste. For example, in Dakar, a Senegalese-Canadian consortium is in charge of collecting and transporting rubbish and of managing the landfill site. A Swiss company has even proposed to invest up to 5 billion FCFA per year for the development of a "composting" industry. However, the problems continue to build due to the following trends:

1. The rapid population growth is leading to the production of more and more urban waste.
2. Solid waste is not always collected and, therefore, is thrown away anywhere by the population. This results in dumps, which are risk factors in epidemics and floods.
3. The collection and transportation of growing waste is difficult in several unstructured areas of the city due to twisting and narrow streets, to the absence of passable roads and to the deterioration of existing ones.
4. All these phenomena are becoming more and more worrying because of the increasing danger for the public health.
5. For the vast majority of the population, solid waste is still perceived as simply a nuisance, without consideration of the possibility of effective sorting or economic valorization.

In the face of this worrying situation, several remedies have been tried in several countries:
- Private/public partnerships (Shafiul & Mansoor, 2004)
- Acknowledgement of the informal sector by authorities and organization of scavenger cooperatives (Medina, 2000)

- Improvement in financing for sustainability (McBean et al. 2005)
- Dealing with the problems via strategic or systemic approaches (Kum et al., 2005, Ericson et al., 2005)
- Involving the community in waste management (Mongkolnchaiarunya, 2005)
- Or even a set of general improvement remedies, as in Kenya (Rotich et al. 2006)

The main purpose of this paper is to present a methodology focusing on the step of multiple criteria analysis and ranking of the 9 areas of Dakar. From the huge literature on Multiple Criteria Decision Aid (MCDA) – see, among others, Colson and De Bruyn (1989), Roy (1996) and Vincke (1992) – we chose the well-known PROMETHEE method by Brans et al. (1986), which has been used in hundreds of applications. We chose the ARGOS and JUDGES software (Colson and Mareschal, 1994), (Colson, 2000). This device enables use of the MCDA methodology including PROMETHEE II. The paper is divided into five sections: after this introduction, Section 2 is devoted to a short presentation of the collected data and of the nine chosen criteria aggregated into three families; next, Section 3 is a brief recall of the PROMETHEE II method. Section 4 interprets the results of our study with the thorough knowledge of areas gained through the numerous visits carried out by our experts during the period 1998-2005. The last section will present some general remedies for the HSW problems of Dakar.

2. THE COLLECTED DATA, THE CRITERIA AND THEIR FAMILIES OF AGGREGATION

2.1. The collected data

Data were collected in 1998 for the community of Dakar[1] in 9 areas that were the subdivisions of greater Dakar, i.e. the city with all its peri-urban areas – see the map of the city with its areas in this Figure.
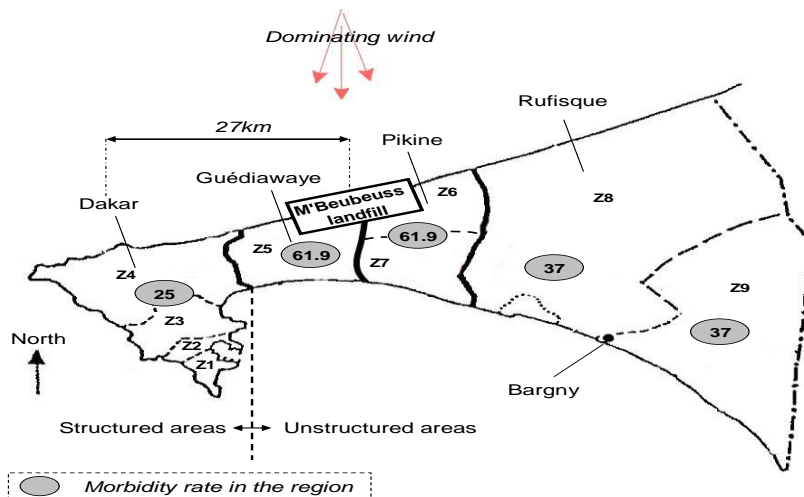
Figure 1: Map of the Urban Community of Dakar and its 9 areas

---

[1] We did not have the possibility of reproducing or updating such an enquiry. The results and the rankings emerging from these data must be treated with caution due to the probable changes during the period 1998-2005. Our experts confirm, however, that the observed changes during their visits unfortunately give the impression of a worsening in HSWM, especially in the poorer unstructured areas.

As is usually the case in developing countries, big cities present some developed areas where the services and the roads infrastructure are more advanced. We call these the structured areas (SA), since all the urban facilities are managed at nearly the same level as in developed countries. There are four structured areas in Dakar and their inhabitants are generally richer and possibly more educated in methods of modern management than the inhabitants of the five other areas, called unstructured areas (UA). In these poorer areas, a general 'laissez aller' approach predominates. The roads inside these UA are narrower, less passable or even impassable by trucks or cars and people tend to neglect waste management here. Our general objective is to compare the nine areas in terms of three general points of view of waste management, which are the production, the collection and the treatment of solid waste produced by the households in each area. First of all, we need to build the criteria in order to achieve this general objective of measuring a relative nuisance, whilst being restricted by the difficulty of data collection in the field. From the production point of view, an enquiry allowed us to estimate the percentage of people in each area producing each increment of generation (kg/day) of waste from 0-2.9 kg to 18 kg and more. Table 1 allows a useful comparison of the distribution of waste production in SA versus in UA areas.

Table 1: Distribution of percentages of Dakar household by HSW production in SA and UA areas

Respondents in structured areas:	%	Respondents in unstructured areas:	%
0-2.9 kg/day	10.87	0-2.9 kg/day	35.19
3-5.9 kg/day	28.27	3-5.9 kg/day	51.85
6-8.9 kg/day	23.91	6-8.9 kg/day	12.96
9-11.9 kg/day	21.74	9-11.9 kg/day	0
12-14.9 kg/day	10.87	12-14.9 kg/day	0
15-17.9 kg/day	2.17	15-17.9 kg/day	0
18 or more kg/day	2.17	18 or more kg/day	0
	100%		100%
Number of H respondents:	46	Number of H respondents:	54

Data source: Enquiry by A. Kamaye, DEA in Environmental Studies, Faculty of Economics, Univ. of Dakar, 1998

Although the numbers of questioned households (H) are nearly the same in both types of areas, the UA population obviously produces smaller amounts of HSW than the SA population. This sample tends to confirm a generally observed rule that richer people produce more rubbish than poorer people. Note that some poor people coming from the UA pick up some HSW in the structured areas with a view to sorting it and making some money before throwing away their collected residues in the UA, thereby increasing the uncollected waste production in these latter areas. From the collection point of view, we first consider the means of HSW transportation by household (Table 2). Obviously again, the modern means of collecting HSW are used more in the SA, while 50% of UA people must convey their garbage on foot to the closest intermediary containers situated in each area. Table 3 tends to confirm this latter observation by showing, for the households of both UA and SA zones, a difference in walking distance for disposing of their garbage at a collection location.

Table following on the next page

Table 2: Distribution of Dakar households by HSW transportation means in SA and UA areas

Respondents in structured areas:	%	Respondents in unstructured areas:	%
"Hand-cart"	2.17	"Hand-cart""	3.70
Containers/on foot	10.87	Containers/on foot	50.00
Packer bodies (compactor trucks)	86.96	Packer bodies (compactor trucks)	46.30
	100%		100%
Number of H respondents:	46	Number of H respondents:	54

Data source: Enquiry by A. Kamaye, DEA in Environmental Studies, Faculty of Economics, Univ. of Dakar, 1998

Table 3: Distribution of Dakar households by walking distance between their home and collection locations

Respondents in structured areas:	%	Respondents in unstructured areas:	%
Less than 20 metres	41.30	Less than 20 metres	27.78
11-20 m	13.04	11-20 m	11.11
21-50 m	10.87	21-50 m	22.22
51-100 m	10.87	51-100 m	12.96
101-150 m	2.17	101-150 m	7.41
More than 150 m	21.75	More than 150 m	18.52
	100%		100%
Number of H respondents:	46	Number of H respondents:	54

Data source: Enquiry by A. Kamaye, DEA in Environmental Studies, Faculty of Economics, Univ. of Dakar, 1998

The importance of walking distance is generally due to the inadequacy of the roads and streets for the modern collection means, which are trucks and packer bodies (compactor trucks). Let us observe then the differences in frequency of collection in each zone (Table 4).

Table 4: Distribution of Dakar households by frequency of HSW collections per week

Respondents in structured areas:	%	Respondents in unstructured areas:	%
Once per week	2.17	Once per week	5.56
Twice per week	32.61	Twice per week	22.22
3 times per week	54.65	3 times per week	27.78
4 times per week	0	4 times per week	0
5 times per week	0	5 times per week	0
6 times per week	0	6 times per week	3.70
7 times per week	10.87	7 times per week	40.74
	100%		100%
Number of H respondents:	46	Number of H respondents:	54

Data source: Enquiry by A. Kamaye, DEA in Environmental Studies, Faculty of Economics, Univ. of Dakar, 1998

In the SA zone, the modal frequency of collections is 3 times per week (>54%), while this reaches 7 times per week in the UA (>40%): the UA inhabitants generally convey their garbage in bulk, while the richer people in SA tend to contain their garbage in bags, implying fewer journeys, even for a higher total conveyed amount. From the point of view of dealing with the garbage, an enquiry has estimated five different ways of treating the HSW in each area: by burning, by burying, by throwing in brooks or gutters, or in open spaces, or by other means. Two other points of view were also considered: 1/ willingness to pay taxes for HSW collection and treatment (Table 5) and 2/ HSW nuisance perception by inhabitants of each area.

Table 5: Distribution of Dakar households by their willingness to pay taxes for HSW collection and treatment (responses in FCFA, 1998)

Respondents in structured areas:	%	Respondents in unstructured areas:	%
0-1000	47.82	0-1000	22.22
1001-2000	17.39	1001-2000	35.19
2001-3000	8.70	2001-3000	20.37
3001-4000	8.69	3001-4000	22.22
4001-5000	10.87	4001-5000	0
> 5000	6.52	> 5000	0
	100%		100%
Number of H respondents:	46	Number of H respondents:	54

Data source: Enquiry by A. Kamaye, DEA in Environmental Studies, Faculty of Economics, Univ. of Dakar, 1998

In response to the question: "How much are you ready to pay for dealing with this garbage?", households show a willingness to pay through taxes to deal with the problem. Their response is an indicator of the consideration people give to this problem and, incidentally, of the sanitary and ecological concern of the population targeted by the enquiry. The majority of people in both areas do not want to pay more than 2000 FCFA. No household in the UA is ready to pay more than 4000 FCFA, whereas more than 17% in the SA are prepared to pay more than this. The very surprising outcome is that nearly one inhabitant in two (>47%) in the SA is unwilling to pay more than 1000 FCFA, as opposed to only 22% in the UA, who are not prepared to pay more than this amount. So, richer people who produce more garbage, and have more sophisticated means of collecting HSW, tend to be more reluctant to pay taxes for dealing with their HSW problem. Let us observe finally that the response to the simple question: "Is the existing HSW problem a nuisance for you?" reveals non-significantly different high percentages of yes answers in each zone (SA = 87%; UA = 85%). So, nearly everybody in this sample is aware of the nuisance provoked by the solid waste in the city. It remains to try to measure the level of this nuisance for each area using the nine following criteria, aggregated in the three families, each family being built to capture one of the three aforementioned objectives or points of view.

2.2. Nine criteria aggregated in three families of objectives

Let us recall that our main purpose is to measure the global nuisance of garbage in each of the 9 areas of Dakar in order to compare these areas by pairwise comparisons. Our ultimate objective is to point out worse and better areas in terms of nuisance with a view to finding, in a future study, examples of best practice for solving the HSW problem. The list of nine criteria of nuisance is shown in Table 6.

Table following on the next page

Table 6: Nine criteria of nuisance with their aggregation in three families or HSWM points of view

Families (Units)	Criteria	Structured areas (SA)				Unstructured areas (UA)				
		z1	z2	z3	z4	z5	z6	z7	z8	z9
PRODUCTION (Kg/H, week)	Volume of waste per household	5.81	9.09	7.69	8.47	4.34	2.70	4.34	2.77	5.88
-	Estimated number of 10^3 households	19.1	36.6	8.3	28.5	25.1	38.0	27.5	14.2	3.8
(Week/Times)	Duration between 2 collections	0.37	0.33	0.19	0.40	0.29	0.22	0.26	0.16	0.14
COLLECTION	Use of means of collection	0	0.10	0.71	0	0.65	0.4	0.62	0	0
	Resistance to paying HSWM taxes	6.33	10.5	29.4	5.75	3.45	9.80	50	12.5	100
(Times/Week)	Frequency of collections	2.73	3	5.14	2.5	3.5	4.5	3.93	6.62	7
TREATMENT (Metre)	Walking distance by household	22.8	79	110	68.2	62.3	9.5	100	132	35.5
	Cultural means of HSW elimination	3.27	4.60	4.71	4.00	4.60	4.05	4.39	4.90	4.00
	Perceived nuisance by household	0.87	0.80	0.83	0.83	0.60	0.83	0.83	1	1

Criterion 1: Average volume of waste produced per household in an area during one week
This is total waste in kilos thrown out during one week by category of household, weighted by the number of households in this category, divided by the number of households in the area.

Criterion 2: Number of households in an area (Table 7)
We assume that a larger number of households represents a potential risk of growth in waste for an area. We have estimated the number of households by using the known number of inhabitants per area and the distribution of household percentages.

Table 7: Numbers (in thousands) of inhabitants and households in the nine areas in 1998

Areas	z1	z2	z3	z4	z5	z6	z7	z8	z9
Number of inhabitants in thousands	190	364	83	284	287	435	315	162	43
Estimate of number of 10^3 households	19.1	36.6	8.3	28.5	25.1	38.0	27.5	14.2	3.8

Data source: Computation based on data issued by: "Direction de la Prévision et de la Statistique", 1999

Criterion 3: Average duration between 2 successive HSW collections
This is the inverse of the third criterion of the collection family of criteria, i.e. of the sixth criterion, shown below. We have observed in the field that a low frequency of waste collections in an area tends to induce bad behaviour such as the spread of disposed of waste through the area.

Obviously however, the sole criterion obtained by the product of criteria 1 and 2 is sufficient to give a rough picture of the waste production. This first ranking of the household waste production in the areas is given in Table 8.

Table 8: A rough ranking of waste production in the 9 areas according to an estimate of waste production

Rough ranking of areas by an estimate of the volume of waste production in tons per week									
Areas	**z2**	**z4**	**z7**	**z1**	**z5**	**z6**	**z3**	**z8**	**z9**
Tons of household wastes per week	333	242	120	111	109	103	64	39	22

According to this rough estimate, the structured area $z2$ is far ahead of the other areas, being the largest producer of waste, while $z9$ is the least polluting area. These issues, without the third criterion, should be considered as a partial viewpoint of production nuisance, while multiplying two criteria is over-compensatory.

Criterion 4: Use of adequate means for collecting HSW
In the structured areas, it is possible and useful to use trucks or hoppers for collecting waste, while using other means is inadequate. The reverse is true for the unstructured areas. So we have designed a binary nuisance variable, which takes the value zero for an SA household in response to the fact that the collection is made by hoppers/trucks in the SA, and the value one if the collection is made by another means. These values are reversed for the same responses given in unstructured areas, i.e. the value is one when hoppers or trucks are used in the UA and the value is zero when other means are used. Then, we compute the ratio of nuisance in each area. For instance, in $z1$, where the 11 respondents said that a suitable means (hopper/truck) is used, the ratio is $0/11 = 0$, illustrating the perfect fit of the collection means with the needs of this structured area. In $z5$, 13 out of the 20 respondents said that hoppers/trucks are used, while the remaining 7 told us: another means is used. Therefore, the ratio of nuisance is $13/20 = 0.65$ for this unstructured area, $z5$.

Criterion 5: Resistance by households to paying HSWM taxes
The enquiry asked households: "How much are you ready to pay in taxes for implementing the transportation, collection and treatment of HSW?" From the results, we computed the average amount respondents were prepared to pay in each area, i.e. the mean payment of HSWM taxes that would be accepted by a household in a given area. By taking the inverse of this amount, we obtained an indicator of the resistance of households to paying for HSWM in each area. If this resistance of an area is shown to increase, this in turn will be an indicator of potential nuisance regarding collection in this area. We observe the subjectivity of this criterion, which is dependent on the evaluation given by the respondents.

Criterion 6: Frequency of HSW collections during one week
While criterion 3 was about the duration between 2 collections in one week, expressed in terms of a fraction of a week, here we consider its inverse, that is, the frequency of HSW collections in one week, expressed in the number of times per week. We observed from criterion 3 that a longer duration increases the risk of HSW spreading into open spaces. Here, a shorter duration, and thus a higher frequency of collections, would increase the cost of collecting and maybe the resistance to paying taxes.

The existence of 2 opposite sides of the same criterion will induce negatively correlated rankings of nuisance for the areas, in terms of the 2 points of view: HSW production and HSW

collection. We observe that this double interpretation of the collecting frequency indicates a classical opposition between the risk and the cost of its reduction. However, note that the frequency of collections is also a commodity for the population.

Criterion 7: The mean walking distance to an HSW collector, expressed in metres
This criterion intends to measure the difficulty experienced by households in dealing with their garbage and also the risk of its spreading into open spaces, which is of course a very bad way of handling HSW.

Criterion 8: Degree of severity of nuisance depending on the chosen cultural means for HSW elimination
Here, a scale of degree of severity of nuisance was proposed: 10 for burning, 5 for burying, 4 for throwing garbage into the street, 2 for disposal in a virgin space and 1 for other means. This scale was designed for reflecting the perceived importance of induced nuisance. Then, the weighted average severity for each area was computed.

Criterion 9: Subjective evaluation by respondents of the existence of HSW nuisance
The proportion of yes answers given by all respondents in an area to the question: "Is the existing HSW problem a nuisance for you?" is a subjective estimation of the perception of nuisance by the inhabitants of that area.

3. MULTIPLE CRITERIA RANKINGS OF THE 9 AREAS BY PROMETHEE II AND BY ARGOS SOFTWARE.
3.1. Methodology
We shall perform a multiple criteria ranking of the areas by using the well-known pairwise method PROMETHEE II included in the ARGOS software. First, we want to avoid the compensation effect, which deletes the information included in an unbalanced multi-criteria profile of the items to rank. Second, we shall use pseudo-criteria rather than true or classical ones. This kind of criterion has the advantage of coping with the weak precision of data, by using 2 thresholds of decision. The first one (q) allows the definition of an interval [–q,+q] on the difference of values of 2 given areas, inside of which one decides on considering both compared areas as equivalent: there is an indifference (I) between the 2 areas in terms of the considered criterion, due to the too weak difference observed. Outside this interval, the pseudo-criterion will not conclude immediately in a strong or sure preference for one area, but a second threshold (p) allows a distinction between a weak preference and a strong or sure preference. If the absolute difference of values between both areas is greater or equal to p, we shall consider that the preference for one of them is clear or sure and we will qualify this as a strong preference (P) in favour of the best valued area. The weak preference (Q) will be decided in a different way, i.e. if the difference between the values is inside one of the intervals [–p,-q] or [+q,+p], it is thus insufficient to decide a strong preference, but sufficient to conclude in a rejection of the indifference and, accordingly, to decide a weak preference. Note that, if q is the only threshold, the pseudo-criterion becomes a quasi criterion with only 2 possible decisions: indifference or preference. The pseudo-criterion becomes a true criterion if q = p = 0, i.e. a criterion without thresholds. The latter case of a true criterion is obviously the usual criterion with an infinite power of discrimination, which is generally ignored by the common user.

Let us summarize the pseudo-criterion through the following diagram, where d(a,b) stands for the difference of values in favour of "a", when it is positive, and in favour of "b", when it is negative (a and b are the 2 compared areas)

```
        bPa              bQa                    aIb         aQb                aPb
--------------------I--------------------I-----------I-----------I--------------------I--------------->d(a,b)
                 -p               -q            0          +q              +p
strong preference  weak preference     indifference   weak preference  strong preference
     for b              for b                           for a              for a
```
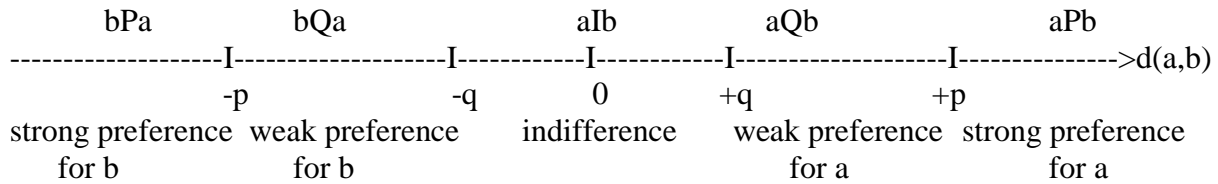
Figure 2: The 5 preference decisions for a pseudo-criterion

The problem of choice of threshold values has been discussed elsewhere (e.g. Colson and Mbangala, 1998). In our case, we considered the following thresholds, q and p, which are respectively 5% and 25% of the maximal range of observed values for the 9 criteria (Table 9).

Table 9: Threshold values of the nine chosen pseudo-criteria

Criteria	c1	c2	c3	c4	c5	c6	c7	c8	c9
Maximal observed values	9.09	43.5	0.4	0.714	100	7	132.	4.89	1
Minimal observed values	2.7	19	0.14	0	3.45	2.5	9.5	3.27	0.6
Ranges	6.39	24.5	0.26	0.714	96.55	4.5	122.5	1.62	0.4
Indifference thresholds (q)	0.32	1.22	0.013	0.036	4.83	0.225	6.133	0.081	0.02
(Strong) Preference thresholds (p)	1.59	6.12	0.064	0.178	24.13	1.125	30.67	0.405	0.10

The PROMETHEE II method is an outranking multiple criteria device that provides an order of items by making pairwise comparisons of these items (in this case, areas), first for each criterion, and then for all criteria. The final ranking is obtained according to the decreasing order of preference flows of the items. Of the 6 kinds proposed by the method, we used only one kind of criterion: the pseudo-criterion, with a linear preference between the 2 thresholds (see Figure 3 here below). Let a and b stand for 2 items and let **d(a,b)** be the difference of their evaluations on a criterion **c.** We assume that a positive **d(a,b)** corresponds to a preference for a over b. The preference function P(d(a,b)) is assumed to take the value 1 as soon the preference is strong (= clearly stated), i.e. when : $|d| > p$, the preference threshold, and is assumed to take the value 0 when an indifference between a and b is decided, since their evaluation difference does not reach the threshold q. Between these 2 decisions, a weak preference is expressed and P increases linearly with d.

$$P(d) = 1 \quad \text{if } |d| > p, \text{ there is a strong preference}$$
$$P(d) = 0 \quad \text{if } |d| < q, \text{ there is indifference}$$
$$P(d) = (|d| - q)/(p-q) \text{ else, there is a weak preference}$$
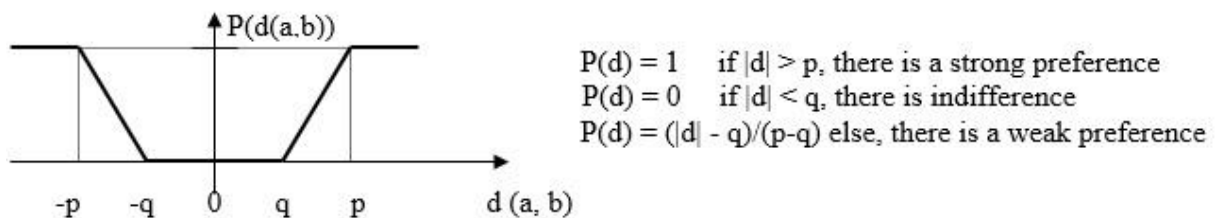
Figure 3: The linear pseudo-criterion

Thus, this criterion states that a is preferred to b when P(d(a,b)) = 1. For the sake of simplicity, let us write $P_c(a,b) \equiv P_c(d(a,b))$: the preference function for the criterion c. The method defines therefore a multi-criteria preference index as the weighted average of the preference functions P_c for all criteria. In our application, we considered that the 3 criteria of each point of view had the same weight. The index Phi(a,b) is computed by formula (1):

$$Phi(a,b) = (P_1(a,b) + P_2(a,b) + P_3(a,b))/3 \qquad (1)$$

This index is called the (multi-criteria) preference flow of a over b. We are more confident that a is preferred to b according to all the criteria of the considered family, when the flow value is closer to 1. Of course, a is surely preferred to b, when the unanimity of criteria is in favour of a, and Phi(a,b) = 1. At this stage, PROMETHEE proposes to build a graph on the set K of considered items: its nodes are all the compared items: a, b, c,…of K; the arcs joining 2 items are valued by Phi(a,b) and Phi(b,a) for a pair (a,b). Then, the method computes 2 flows for an item a:

$$Phi^+(a) = \Sigma_{b \in K} Phi(a,b): \text{ the leaving flow; } Phi^-(a) = \Sigma_{b \in K} Phi(b,a): \text{ the entering flow} \qquad (2)$$

One may interpret the leaving flow as a multi-criteria force of preference of a against the other items in K, and the entering flow as a multi-criteria preference weakness of a.

In PROMETHEE II, a balance of flows is achieved by delivering a net preference flow for each item a with respect to all the other items and for all criteria of the family:

$$Phi (a) = Phi^+(a)\text{-}Phi^-(a): \quad \text{the net flow in favour of a} \qquad (3)$$

Usually, by ranking the net flows in decreasing order, we obtain the preference ranking of the items, the positive flows being associated to the dominating items and the negative ones to the dominated ones. A very important point must be made here: we are searching for results regarding the level of nuisance and, accordingly, we have conserved positive flows for the areas dominating the others in terms of nuisance. Obviously however, everyone prefers less nuisance to more, so that we could have changed all signs of preference to rank the lowest level of nuisance first rather than the highest one. Another point is that we did not divide the flows by (n-1), n being the number of items in (2), as in the classical method, in order to point out the maximal number of possible dominances. We followed this simplified PROMETHEE for each point of view using the data from Tables 6 and 9. The results are shown in Table 10, below. Since there are 9 areas, the maximal possible value of a flow is 8 for one point of view, which would mean that the corresponding area would dominate all other areas in terms of all the criteria in the family. Let us observe that the maximum observed flow is 7.089 for z8 in the Treatment family, not far from this value 8. For the global viewpoint, the maximal possible value of flow would be 24. PROMETHEE III also provides a possible ranking of the areas in terms of each point of view, but it includes some uncertainty about the exact value of each area preference flow. Indeed, Brans et al. (1984) observed that PROMETHEE II provided a unique value of the net flow Phi(a) at the end of the calculus, although the distribution of flows Phi(a,b) for all b ∈ K provided a set of different values of multi-criteria preference. Then the authors suggested capturing some uncertainty of preference by building an interval pre-order of compared items, using these general rules of interval ranking:

aPb if the lowest value of the interval of a is greater than the highest value of the interval of b
aIb otherwise, i.e. when there is an overlay of both intervals.   (4)

The interval calculus for an item a, proposed by Brans et al. (1984) consists of computing the mean value m and the standard deviation s of the distribution of the flows Phi(a,b). Then, the bounding values of the interval are: $m \pm \alpha s$. By playing with the values of parameter α, they could more or less incorporate uncertainty of ranking. Indeed, a greater value enlarges the intervals, often resulting in chains of indifference. A smaller value of α excludes too much uncertainty. There exists an optimal α value, which just avoids any chains of indifference. In our application, we used two simplifications: first, we computed the full interval with the range:

Max $_b$ Phi(a,b) – Min $_b$ Phi(a,b) for all b ∈ K, then by breaking the chains, we could visually avoid concluding in a chain indifference. This visual decision required only that a graph could be exhibited with a few items, as was the case in our application. Note that the mean m of each interval is the net flow given by PROMETHEE II.

3.2. Technical results obtained by our ARGOS software (Table 10 and Figures 3 to 5)

The results of PROMETHEE II and III are summarized in Table 10 and Figure 3, and are grouped in clusters of proximate preference net flows, in terms of each of the 3 viewpoints. The global point of view may be issued from an adding up of results of the points of view and this is shown on the right hand side of Table 10. In terms of the HSW production objective, areas z2 and z4 are clearly worse in terms of nuisance and z8, z9 clearly better, while z1 is still dominating the others in terms of relative nuisance. In terms of the HSW collection objective, areas z7 and z3 are clearly worse in terms of nuisance and z1, z4 clearly better, while z9, z6 are still dominating the others. The HSW treatment objective reveals clearly the worst level of nuisance in area z8 and the clearly better areas of z1, z6, while z3, z7 and z2 have a dominating level of nuisance.

Table 10: Nuisance flows of the 9 areas in decreasing order in terms of the 3 points of view and the global flow balance issued from PROMETHEE II
The maximum possible flow is 8 for one point of view and 24 for the global viewpoint.

| PRODUCTION Of HSW		COLLECTION Of HSW		TREATMENT Of HSW		GLOBAL	
Clearly worse		Clearly worse		Clearly worse		The worst TOP 3	
z2	6.069	z7	3.852	z8	7.089	**z2**	**6.000**
z4	5.394	z3	3.547			z7	5.169
				z3	3.078	z3	4.882
z1	1.609	z9	1.183	z7	1.489		
z5	-0.083	z6	0.147	z2	0.811	z8	0.448
z7	-0.172	z5	-0.730	z9	-0.572	z4	0.404
z6	-0.654	z8	-0.820	z5	-1.643	z5	-2.456
z3	-1.743	z2	-0.880	z4	-1.710	The best TOP 3	
Clearly better		Clearly better		Clearly better		z9	-3.986
z9	-4.597	z1	-3.020	z6	-3.962	z6	-4.469
z8	-5.821	z4	-3.280	z1	-4.579	**z1**	**-5.990**

Figure following on the next page
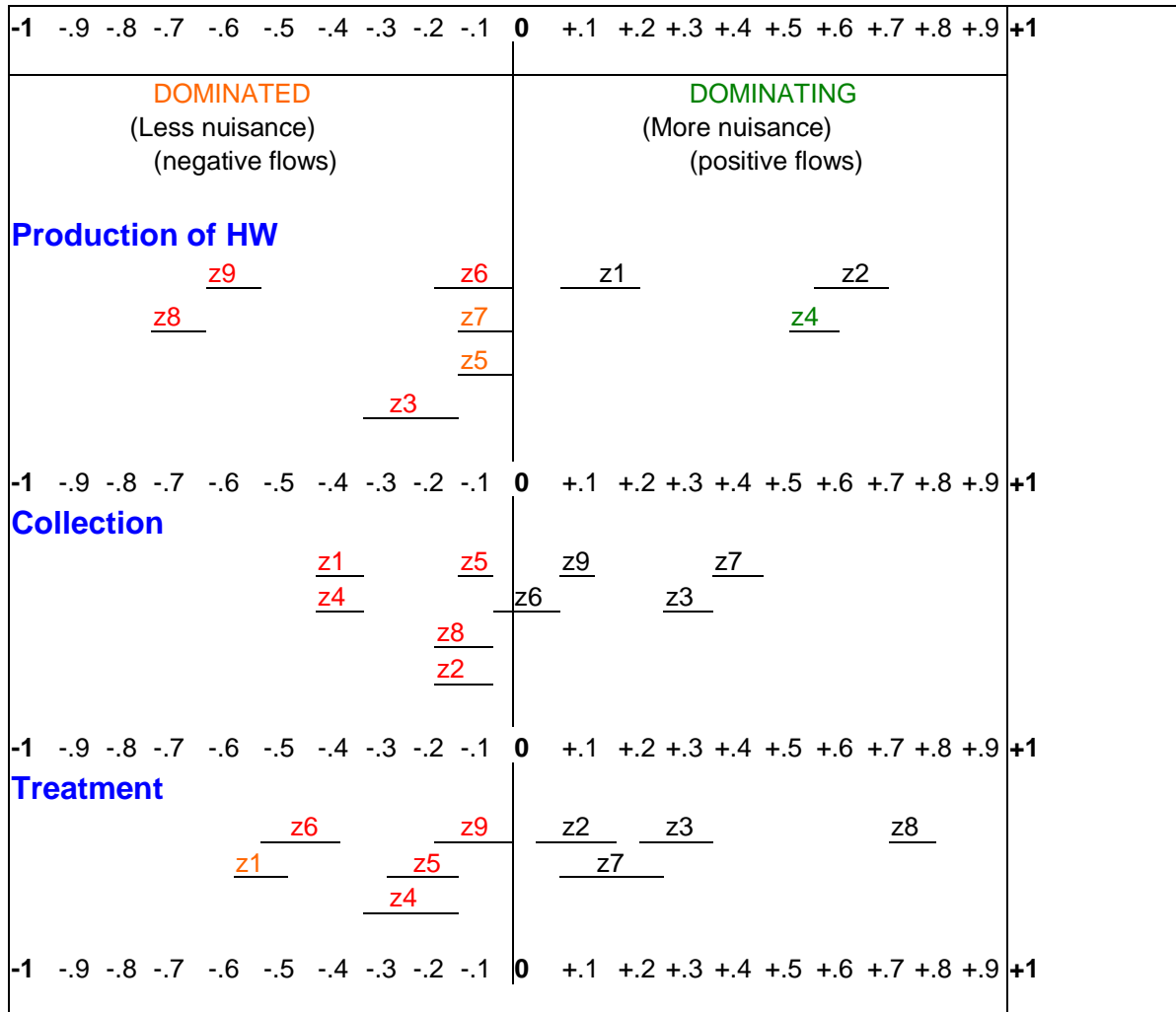
Figure 3: nuisance flow intervals obtained by PROMETHEE III for the 3 points of view

4. INTERPRETATION OF THE RESULTS BY USING FIELD KNOWLEDGE – SEE MAP IN FIGURE 1

4.1. The point of view of HSW production

According to Table 10 and Figure 3, the z2 area is the worst in terms of nuisance level, followed by z4, while z8 is the best area. We also observed that the three areas z2, z4 and z1 dominate the others regarding nuisance. z8 and z9 are strongly the best areas, and in the middle ranking, z6, z7, z5 and z3 appear dominated, i.e. they are rather good. z2 presents the highest level of waste production in kgs/household (9.09) and is the most crowded (36,600 households). Among the SA, z2 is the first industrialized area, which has attracted more people to live there. z4 has nearly the same characteristics but it presents the highest level of garbage collection duration in all areas, and this explains the overlay in Figure 3 between z2 and z4. The z1 area is the most beautiful tourist part of Dakar, where the main official and administrative buildings and also the richest inhabitants of the city are located. This explains the lower figures of Table 6. The best areas, in terms of nuisance level, z8 and z9, are far away from z1 and are semi-rural; they have a lesser population and the frequency of collection is higher. This latter observation is explained by a different behaviour with respect to HSW: the population gets rid of its garbage more quickly, but we will see in the *treatment* point of view that the cultural means of elimination are very bad for area z8. The good ranking of z3 must not be considered as a good sign.

Their good ranking is mainly due to there being few households (8,300), but at the same time these household display rather bad HSW behaviour. Indeed, they produce the second largest amount of waste per household and they use the second worst cultural means of elimination with a high collection frequency, as with z8. Note, however, that, in the structured areas, z3 is the most resistant to paying taxes for garbage collection and treatment (29.4), probably due to the fact that the residents suffer from the highest level of tax charges linked to their number of houses. Observe on the map in Section 1 that the landfill site is located close to the sea, inside areas z5 and z6. Area z6 has the largest number of households (38,000) and has the sad privilege of having the highest rate of morbidity: 61.9%, while the mean morbidity rate for Dakar is 30.4%. Maybe the presence of the landfill could explain the lowest level of kgs waste/household here (2.7). The z6 area is semi-rural, whereas, z5 is more urban. Finally, we observe that areas z5 and z7 are very similar in terms of the three criteria of the production point of view and this is not a surprise considering their location on the map.

4.2. The point of view of HSW collection

z7 is the worst area with respect to this point of view. Indeed, it is the second worst area (50), after z9 (100), in terms of resistance to paying taxes for garbage collection and treatment, and z7 has the third worst issue for the use of collection means (0.62). One possible reason is that some rich people have built houses in this area and can dispose of their garbage by truck collection; this rich segment of the population constitutes a niche, which biased the mean of the sector. z3 is remarkable in having the worst use of collection means (0.71) and a low frequency of collections (6th, 5.14). z9 presents an exceptional resistance to paying taxes, since this population is poorer. The structured areas z1 and z4 are very similar in terms of the three criteria.

4.3. The point of view of HSW treatment

The z8 area is clearly the worst area due to its first ranking in all the criteria of this family: respectively, 132 m in walking distance to the collection point, 4.9 in terms of cultural means and 1 for perceived nuisance by the rural population. In this area, the trucks do not come and the population does not take much care in the way it eliminates its garbage. z3 is an industrial area where the collection points are more spaced out (110 m) and, accordingly, the HSW behaviour of people is poor, as in z8 (4.71); the perceived nuisance is high. Areas z2 and z7 have similar results except for the shorter walking distance of z2 (79 m). The cluster z9, z5 and z4 do not have the same perception of nuisance, while z9 has a full perception (1), z4 has a high perception (0.83) but z5 has the lowest, despite some of its population being close to the dumpsite. The other area, z6, has some population very close to the dumpsite and it benefits from the shortest walking distance to dispose of its HSW (9.5 m). The residential area, z1, is characterized by the best performance in terms of cultural means of HSW elimination (3.27). It also has a short walking distance but a very high perception of nuisance.

5. SOME SUGGESTIONS FOR THE REMEDIATION OF SANITARY, ECONOMIC, AESTHETIC AND ENVIRONMENTAL HSW PROBLEMS IN THE URBAN COMMUNITY OF DAKAR

As Rotich et al. (2006) have rightly said, "The problems facing developing countries in the handling of municipal solid and liquid wastes … need concerted effort from all sectors of society. An all inclusive approach should be adopted in order to achieve any meaningful and lasting solution" (2006, p. 98). These authors propose the adoption of the following general remedies:

1. Source reduction and reuse: this reduction "involves a minimization of waste reaching the drop off points". In Kenya, for example, for reusing packaging, "local artisan groups are

involved in producing inexpensive farm tools such as sprays and watering cans". These low in cost products have a big market among the low-income population.

2. Recycling of municipal solid waste (MSW): this provides a cheaper source of raw materials for manufacturing industries.

3. Privatization and community involvement: "with privatisation of MSW services in the upper and middle income areas, local authorities can … divert some of the services to poor suburban areas communities where private services may not be affordable."

Let us consider some other possible general remedies for the HSWM problems. Some of such remedies are also proposed by the literature.

- Sorting HSW at home,
- Providing special receptacles for facilitating the separation of different types of HSW for the purposes of recycling,
- Providing tricycle-vans and pushcarts to scavengers or itinerant merchants, and/or to associations,
- Financing sorting and collection equipment by micro-credit,
- Government support for cooperatives of scavengers (or itinerant merchants),
- Creating "controlled container parks", or how to move from a situation of uncontrolled landfill to the use of container parks,
- Using the M'Beubeuss landfill to produce biogas and energy.

6. CONCLUSION

In this paper, we have presented the first study using a multiple criteria and multiple viewpoint analysis of the household solid waste management (HSWM) for the Urban Community of Dakar. This analysis has mainly produced three rankings regarding relative nuisance in nine areas of this community, in terms of three general objectives: the production, the collection and the treatment of HSW. These rankings had the purpose of revealing the worst and best areas in terms of nuisance, in order to find specific and general remedies to the problematic situation of HSWM in this city of a developing country. Through an exploration of the literature and mostly through several field observations, we have proposed a set of general remedies for the whole Urban Community of Dakar. None of these remedies can be considered as a panacea and their application should be considered with all the required prudence. We must also consider that micro-credit is a useful instrument for improving HSW sorting, which is basic for providing a good return in the garbage reclamation and let us recall that the development of small enterprises is very important in Africa. Pilot experiments should probably be tried before a more general application and their, hopefully successful, results could encourage further improvements. Here, the methodology of this map of nuisance may be useful in designing pilot experiments. The remedies can be taken individually or as subsets of improvement measures. Indeed, the general remedies, quoted in the previous section for improving HSWM, also constitute a chain of improvement, since they can be implemented together and can benefit from their mutual reinforcement. Since some of them, at least, might improve the whole system of HSWM, their impact on the socio-economic, sanitary and ecological conditions of Dakar's population – especially, and hopefully, for the poorest people - would induce virtuous circles in place of the current vicious ones. This is our hope.

LITERATURE:
1. Anderson C.L., Locker L., Nugent R., 2002. Micro-credit, Social Capital and Common Pool Resources, World Development, 30(1), 95-105.
2. Bhuiya A., Chowdbury M., 2002. Beneficial effects of a women-focused development programme on child survival: evidence from rural Bangladesh, Social Science & Medicine, 55(9), 1553-1560.
3. Brans J.P., Vincke Ph., Mareschal B., 1984. PROMETHEE: a new family of outranking methods in multi-criteria analysis, in 'Operational Research 84', Brans J.P. ed., North Holland, New York, 477-490.
4. Brans J.P., Vincke Ph., Mareschal B., 1986. How to select and to rank projects: the PROMETHEE method, European Journal of Operational Research, 24(2): 228-238.
5. Colson G., 2000. The OR's prize winner and the software ARGOS: how a multi-judge and a multi-criteria ranking GDSS helps a jury to attribute a scientific award, Computers & Operations Research, 27, 741-755.
6. Colson G., Mareschal B., 1994. JUDGES: A descriptive group decision support system for the ranking of items, Decision Support Systems, 12, 391-404.
7. Colson G., De Bruyn Chr., editors, 1989. Models and Methods in Multiple Criteria Decision Making, Pergamon Press, New York.
8. Colson G., Mbangala M., 1998. Evaluation multicritère d'entreprises publiques du rail, Fineco, 8(1), 45-71.
9. Denotes V., Kritikos A.S., 2004. The individual micro-lending contract: is it a better design than joint-liability? Evidence from Georgia, Economic Systems, 28(2), 155-176.
10. Ericson O., Carlsson Reich M., Frostell B., Bjorklund A., Assefa G., Sundqvist J.O., Granath J., Baky A., Thyselius L., 2005. Municipal solid waste management from a system perspective, Journal of Cleaner Production, 13, 241-252.
11. Kapepula K.M., 2009. Contribution à l'amélioration de la gestion de déchets ménagers solides dans les villes des pays en développement. Le cas de Dakar au Sénégal, Thèse de doctorat, Université de Liège, Belgique.
12. Koushki P.A., Al-Duij U., Al-Ghimlas W., 2004. Collection and transportation cost of household solid waste in Kuwait, Waste Management, 24, 957-964.
13. Kum V., Sharp A., Harnporchai N., 2005. Improving the solid waste management in Phnom Penh City: a strategic approach, Waste Management, 25, 101-109.
14. McBean E.A., del Rosso E., Rovers F.A., 2005. Improvements in financing for sustainability in solid waste management, Resources, Conservation & Recycling, 43, 391-701.
15. Medina M., 2000. Scavenger cooperatives in Asia and Latin America, Resources, Conservation & Recycling, 31, 51-69.
16. Premchander S., 2003. NGOs and local MFIs – how to increase poverty reduction through women's small and micro-enterprise, Futures, 35(4), 361-378.
17. Rogerson C.M., 2001. In search of the African miracle: debates on successful small enterprise development in Africa, Habitat International, 25(1), 115-142.
18. Rotich K. Henry, Zhao Yongsheng, Dong Jun, 2006. Municipal solid waste management challenges in developing countries –Kenyan case study, Waste Management, 26, 92-100..
19. Roy B., 1996. Multi-criteria methodology for decision aiding, Kluwer Academic Publ., Norwell.
20. Samiul H., 1998. Problems of municipal waste management in Bangladesh: An enquiry into its nature, Habitat International, 22(2), 191-202.
21. Shafiul A.A., Mansoor A., 2004. Partnerships for solid waste management in developing countries: linking theories to practices, Habitat International, 28, 467-479.

22. Syed M.A., Chowdbury M., 2001. Micro-Credit and Emotional Well-Being: the Experience of Poor Rural Women from Matlab, Bangladesh, World Development, 29(11), 1957-1966.
23. Thorp R., Stewart F., Heyer A., 2005. When and how far is group formation a route out of chronic poverty?, World Development, 907-920.
24. Vincke Ph., 1992. Multi-criteria decision aid, Wiley, Chichester.

TOURISM AND JOB INVOLVEMENT AS CRITICAL FACTORS OF EMPLOYEES' CUSTOMER ORIENTATION AND ITS SERVICE OUTCOMES - THE EVIDENCE FROM HOTEL INDUSTRY IN POLAND

Aleksandra Grobelna
Gdynia Maritime University, Poland
a.grobelna@wpit.am.gdynia.pl

ABSTRACT

This study examines potential antecedents of employees' customer orientation, both job and non-job related, and its critical behavioral consequences, which are crucial for effective functioning of service organizations. More specifically, this study tested a relationships between hotel employees' tourism and job involvement and their customer orientation. Moreover relationships between customer orientation and both role-prescribed and extra-role customer service were also examined. The study was conducted in hotels located in the Pomeranian Voivodeship, which is a tourist destination in Northern Poland with extensive accommodation infrastructure. The research hypotheses were tested using data from employees who deal directly with hotel guests. The study results revealed that a higher level of employees' job involvement may strengthen their customer orientation, and similarly, the more hotel employees are interested in tourism and receive pleasure from it, the higher customer-orientation they display. Additionally, customer orientation may have positive consequences for employees' customer service, both prescribed and extra role. The research value of this study may result from the fact that so far few studies have examined the impact of non-job related factors on service employees' attitudes and behaviors at work. Specifically tourism involvement has not been widely explored in the management literature. This study is among the first that examine the relationships between tourism and job involvement and employees' customer orientation and its consequences for service performance in the context of hospitality industry in Poland.
Keywords: customer orientation, customer service, hotel employees, job involvement, tourism involvement

1. INTRODUCTION

Given the fact that frontline employees are critical elements of service quality (Yeh, 2013) and play a significant role in ensuring customers' satisfaction (Lee, 2014), their customer-oriented approach should be perceived as the core of the organization's competitiveness. As reported by Hennig-Thurau (2004, p. 472), "(…) employees' level of customer orientation is a key driver for customers' satisfaction with the service firm, the level of emotional commitment of these customers to the firm, and, most importantly, their degree of retention." Despite the apparent importance of employees' customer orientation for the success of any service firm, research on that construct has been still limited (Hennig-Thurau, 2004; Brown et al. 2002; Sivesan and Karunanithy, 2014). Therefore, this study attempts to bridge that research gap by examining the impact of both job and non-job related characteristics on hotel employees' customer-orientation and its relationships with employees' behavioral outcomes.

The research problem is seeking the answer for the following questions:

1. May job involvement (JINV) and perceived pleasure/interest in tourism (P/I_TINV), as one of the dimensions of tourism involvement (Yeh, 2013; Gursoy and Gavcar, 2003), be significant antecedents of hotel employees' customer orientation (C_O)?
2. Are there any relationships between customer orientation (C_O) and employees' both role-prescribed (R_P SERVICE) and extra-role customer service (EX_R SERVICE).

The justification for the above questions arises from the following arguments:

- First. Tourism involvement has not been widely explored in the tourism literature, particularly in the context of hotel employees, nor has the research on the effects of tourism involvement on specific work outcomes been extensive (Suhartanto et al., 2018; Yeh, 2013);
- Second. The hospitality industry is increasingly facing an emphasis on the superior service delivery to its customers (Lee et al. 2016) who are becoming more demanding (Tajeddini, 2010) and do not appreciate it when service providers just follow the prescribed operational manuals (Lee, 2014). Therefore, both role-prescribed and extra-role customer service are examined in this study, as hospitality employees should behave not only in line with basic rules and regulations, but also have to deliver superior service that may exceed customers' expectations (Tsaur et al. 2014);
- Third. Although customer orientation plays an important role as "an enduring reservoir of emotional cognitive resources to enhance performance", still limited empirical evidence suggests a positive relationship between frontline employees' customer orientation and their job-related performance (Choi et al., 2014, p. 276). Therefore, in this study the relationship between customer orientation and employees' service performance outcomes has been examined.

The research value of this study may result from the fact that few studies have examined the impact of tourism involvement on hospitality employees' attitudes and behaviors at work. Additionally, other research, to the best of author's knowledge, while focusing on employees' job involvement, does not take the dimension of tourism involvement into empirical consideration. This study attempts at exploring both of these variables, which better understanding is important to provide useful insights into employees' customer-oriented attitudes and behaviors in the hospitality industry workplace, the more that research on that issue still seems to be limited. Moreover this study is among the first that jointly examine the antecedents of employees' customer orientation and its consequences for service performance in the context of hospitality industry in East-Central Europe. Based on above, the present study aim to add to the literature of management and marketing and offer managerial insights into job and non-job related variables that may enhance employees' customer orientation and through that the quality of service.

2. THEORETICAL BACKGROUND

Customer orientation (C_O) is perceived as a fundamental concept to both the theory and practice of marketing management (Lee et al. 2012). Brown et al. (2002, p. 111) define it as "an employee's tendency or predisposition to meet customer needs in an on-the-job context". Customer orientation comprises two dimensions: needs and enjoyment. The first one represents employees' beliefs about their ability to satisfy customer needs; the second one refers to the degree to which interacting with and serving customers is inherently enjoyable for an employee (Brown et al., 2002). It is emphasized that customer-oriented employees treat customers in a polite and kind manner, serve them with a smile and deal effectively with their needs and problems (Karatepe and Douri, 2012; Babakus et al. 2009). Moreover, they can naturally and authentically display emotions and behaviors that contribute to highly satisfying service encounters (Babakus et al., 2009). Unsurprisingly, employees' C_O may promote organizational functioning and relationship marketing (Kim, 2009). The results of Kim's (2009) study in the context a full-service restaurant showed how employees' customer orientation affects customers' perceptions of relational benefits and ultimately contributes to their long-term commitment to the restaurant.

Similarly, Hennig-Thurau (2004) indicated that C_O of service employees has a positive influence on customers' satisfaction and commitment, thus increasing the degree of their retention. C_O also creates other significant job-related outcomes at an individual employee level. The findings of previous studies revealed, among others, that C_O exerts a positive influence on job satisfaction (Donavan et al. 2004; Rod and Ashill, 2010; Lee et al., 2016), organizational commitment (Donavan et al., 2004; Rod and Ashill, 2010), organizational citizenship behavior (Donavan et al., 2004), job performance (Babakus et al., 2009; Brown et al., 2002) and service provider's service quality efficacy (Lee, 2014). Additionally, it also has a negative relationship with job burnout (Babakus et al., 2009). Summarizing, the success or failure of any service interaction in the hospitality industry mostly depends on employees' service predispositions. Specifically, customer orientation of hotel employees is greatly important, as it enables them to respond promptly and adequately to a variety of hotel guests' needs and their rapidly changing expectations.

2.1. Conceptual model and hypotheses development
Based on the review of the relevant literature and previous research empirical findings, this study develops and tests a conceptual model (Fig. 1) that investigates the relationships of both:
- job involvement (JINV), as a job-related characteristic,
- and perceived pleasure/interest in tourism (P/I_TINV), as a non-job-related characteristic, with employees' customer orientation (C_O).

It is also expected that customer orientation (C_O) may significantly correlate with employees' service behaviors, both role-prescribed (R_P SERVICE) and extra-role customer service (EX_R SERVICE).
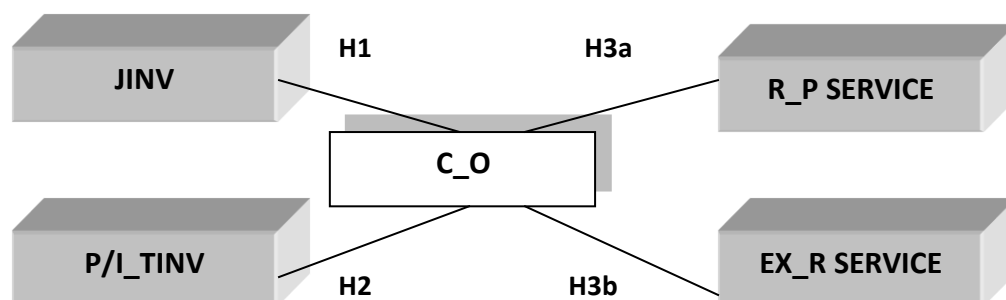

Figure 1: Conceptual model
Note: JINV (Job Involvement); P/I_TINV (Pleasure/Interest in Tourism); R_P SERVICE (Role-Prescribed Customer Service); EX_R SERVICE (Extra-Role Customer Service)

The abovementioned relationships were examined based on the example of hotel employees in Northern Poland, where to the best of Authors' knowledge, empirical studies on this issue in the hospitality setting are strongly limited.

2.1.1. Job involvement
Job involvement has received considerable attention in the field of organizational behavior and occupational psychology and relates to how much a person values and identifies with the present job (Huang et al. 2016). Jobs of highly involved employees seem inevitably connected with their interests, life goals, as well as satisfaction that can be gained from effectively performing the job duties (Liao and Lee, 2009). When employees are truly involved in their jobs and achieving organizational objectives, they provide numerous advantages for their

organization and its customers (Szelągowska-Rudzka, 2015). More involved employees feel more competent and successful in their work (Liao and Lee, 2009) and put both more time and effort into their jobs (Huang et al., 2016). A study by Kuruüzüm et al. (2009) among hotel employees in Turkey showed among other results, that job involvement affects affective and normative commitment. These findings are also supported by the study results of Zopiatis et al. (2014), who in their study among hospitality employees in Cyprus proved positive associations between job involvement and employees' commitment; moreover, they showed that highly job-involved employees also have higher intrinsic job satisfaction. Unsurprisingly, highly job-involved employees may also be more focused on customers and gain true enjoyment while interacting with them. For example, Lau and Huang's (1999) showed, among others, that the degree of job involvement is positively related to the level of salespeople's customer orientation. Based on above, it can be assumed that also hotel employees who are truly involved in their service jobs may be more likely to make an extra effort to meet customers' needs, deriving true satisfaction from serving their customers. Thus the following hypothesis is proposed:

H1: There is a positive relation between job involvement and hotel employees' customer orientation.

2.1.2. Tourism involvement

Havitz and Dimanche (1990), as cited by Yeh (2013, p. 215), define tourism involvement as "person's perceived relevance of tourism activities and the motivational state with regard to them." Among many personal benefits that tourism may provide, the literature indicates rest and regeneration from work, the impact on subjective well-being, gaining new experience, creating opportunities for learning, personal growth and social development (McCabe,2009; McCabe and Johnson, 2013; Li, 2000; Gilbert and Abdullah, 2004). Participation in holidays, gives people an opportunity to be away from their daily environment, a chance to solve their problems actively, to recover from past difficulties and face the future more optimistically (McCabe, 2009). Thus, holiday taking, as a form of leisure activity and experience, may help people to enhance their sense of happiness (Gilbert and Abdullah, 2004), which may strengthen their positive feelings and attitudes in different domains, including the work one. For example, Yeh (2013) revealed that tourism involvement of frontline hotel employees in Taiwan is positively related to their work engagement and may have positive spill-over effects on their job satisfaction. Whereas Suhartanto et al. (2018) proved that tourism involvement may have a direct, positive effect on employees' service performance. Based on above, it can be assumed that tourism involvement may have a motivational impact on employees and their positive attitudes in the workplace, especially considering that tourism is also an irreplaceable factor of self-education (Global Code of Ethics for tourism, UNWTO). It provides an opportunity to experience different places/cultures and a chance to broaden one's horizons (McCabe and Johnson, 2013). Experiential learning while traveling opens the eyes "to a broader picture of world lives" (Li, 2000, p. 872). This unique experience may have a great learning potential for industry workers, who, through the lens of their own tourism experience, may become more sensitive to and concerned for customers, particularly those from different cultural backgrounds. Based on the above, it sounds reasonable to conclude that also hotel employees who derive pleasure from tourism involvement and are strongly interested in tourism activities may achieve a higher level of customer orientation. Thus the following hypothesis is proposed:

H2: There is a positive relation between perceived pleasure and interest in tourism and hotel employees' customer orientation.

2.1.3. Extra role and role-prescribed behavior

Extra-role customer service is perceived as discretionary behaviors of contact employees in serving customers that go beyond the requirements of the formal role, whereas role-prescribed customer service refers to contact employees' expected behaviors that derive from implicit norms, job descriptions, performance evaluation forms and other formal obligations (Bettencourt and Brown, 1997; Tsaur and Lin, 2004). Employees with high C_O have a greater propensity to like their jobs and to perform well in their roles and extra-role behaviors (see Lee et al., 2016). They are particularly prone to be helpful and cooperative while dealing with their customers (Babakus et al., 2009). In other words, those employees may have "a natural internal drive" to be engaged in customer-satisfying behaviors (Babakus et al., 2009, p. 483). This may result from the fit between them and their service jobs' requirements. Thus, the Person–Job Fit Theory may provide a theoretical framework for developing relationships between C_O and employees' job outcomes (Karatepe and Douri, 2012). The Person–Job fit refers to the degree of match between employees' personality, skills, and abilities and the demands of the specific jobs/job tasks (Donavan et al., 2004). The results of previous studies revealed that customer-oriented employees display high quality of customer service. For example, Choi et al. (2014) reported a positive effect of C_O on service recovery performance of frontline service providers in tourism companies. In the case of hotel employees, Karatepe and Douri (2012) proved that there is a significant and positive relationship between their customer orientation and the role-prescribed customer service. Thus, as indicated in Ro and Chen's (2011) study, the more employees perceive themselves as customer-oriented, the more they feel confident of the performance of their job and its meaningfulness. Based on the above, the following hypothesis is proposed:

H3: There is a positive relation between hotel employees' customer orientation and their role-prescribed (a) and extra-role (b) customer service.

3. METHOD

3.1. Respondents and procedure

The study was conducted in hotels located in the Pomeranian Voivodeship, which is a tourist destination in Northern Poland with extensive accommodation infrastructure. The research hypotheses were tested using data from employees who deal directly with hotel guests. These employees were chosen as, due to their boundary-spanning roles, they play a crucial role in service delivery and in building successful relationships with customers (Babakus et al., 2009). After personal meetings with general managers and explaining the study aim to them, 12 hotels agreed to participate in this research. Based on the information gathered from general or human resource managers, an appropriate number of questionnaires were distributed to hotels, in packs containing a cover letter and return envelopes to ensure confidentiality. Employees were also assured of anonymity and voluntary participation in this study. Respondents were requested to fill in the questionnaires in a self-administrated manner during they work time. A total of 304 questionnaires were distributed, and 222 valid questionnaires were collected, yielding a response rate of 73.03%. The majority of the respondents were women (79.3%). Over half of the study participants (55.9%) were aged between 21 and 30 years, nearly a quarter (20.2%) were in the age bracket of 31-40 years old, the remaining ones were either older (21.2%) or up to 20 years old (2.7%). Regarding the educational level, most of the respondents declared a university degree (47.7%) or had secondary school education (41.4%). The remaining subjects had primary or vocational education. Of particular interest in this study were also both hotel employees' work experience and their experience in tourism. For 45.9% of the surveyed employees the total work experience in the hospitality industry had been between 1 and 5 years, a quarter of the respondents (20.3%) declared the length of working experience from 6 to 10 years and almost the same percentage (20.7%) had been working in the industry for over 11

years and longer. Only 13.1% of the surveyed had been working in the hospitality industry below 1 year. Over half of the study participants (52.3%) travel two–four times a year for tourist purposes. 36.9% of the respondents participate in tourism activities once a year or less frequently; the remaining ones (10.8%) travel five times a year or more. The above data show that the studied group seems to have rich experience both in work in the hospitality industry and in tourism activities; hence they may provide adequate feedback on the analyzed relationships in this study.

3.2. Measurement of variables

Study constructs shown in Fig. 1 were operationalized using multiple items that have received considerable empirical attention in previous studies, including those conducted in the tourism and hospitality setting. Customer orientation (C_O) was measured via three items taken from Lee (2014), who successfully applied them to measure customer orientation of employees in super deluxe hotels in Seoul (Korea). Items from Bettencourt and Brown (1997) were accordingly employed to measure extra-role customer service (EX_R SERVICE; 5 items) of hotel employees and role-prescribed customer service (R_P SERVICE; 5 items) in this study. This is consonant with previous studies in the hospitality setting (e.g. Karatepe and Douri, 2012). Job involvement (J_INV) items came from Cheng's study (2011) conducted among hotel employees working in international tourist hotels in Taiwan. Perceived pleasure/interest in tourism (P/I_TINV), as one of the dimensions of tourism involvement, was measured via 5 items taken from Yeh's (2013) study based on the multidimensional Consumer Involvement Profile Scale adapted from Gursoy and Gavcar's (2003) study and data collected among hospitality employees in Taiwan. Responses to all items were rated on five-point scales ranging from 5 (strongly agree) to 1 (strongly disagree). Higher scores reflected a higher level of each construct. The survey instrument was originally prepared in English and then translated into Polish through the back-translation method. IBM SPSS Statistics 24 as well as the R version 3.2.4 package lavaan 0.5-20 was used for statistical analyses.

4. ANALYSIS AND RESULTS

Confirmatory factor analysis (CFA) was performed using diagonally weighted least squares (WLSMV) (Li, 2016) to test whether observable variables loaded significantly on their respective latent variables. In the light of CFA results, one item from JINV had to be removed due to poor standardized loadings (<0.50) (Lee/Ok, 2012). After scale purification, the results showed a good fit of the five-factor model to the data on the basis of a variety of fit statistics (see Hooper et al., 2008): GFI [Goodness of Fit Index] = 1; AGFI [Adjusted Goodness of Fit Index] = 1; NFI [Normed Fit Index] = 0.97; CFI [Comparative Fit Index] = 1; RMR [Root Mean Square Residual] = 0.03. The magnitudes of the standardized loadings ranged from 0.57 to 0.88, and all t-values were significant (t>2.0). The scale reliability was assessed by Cronbach's alpha. Coefficient alpha values were as follows: 0.92 for EX_R SERVICE; 0.90 for P_R SERVICE; 0.90 for P/I_TINV; 0.73 for C_O and 0.62 for JINV. Results of the alpha coefficient were greater than the cut-off value of 0.70 (Nunnally, 1978), except for JINV. However, this factor was kept, in line with previous studies where similar or even lower values of coefficient alpha were still considered to be sufficient at the early stages of exploratory research (see Tepeci and Bartlett, 2002; Kwok et al. 2012). As proposed in the relational model, the study results revealed that both JINV and P/I_TINV significantly and positively correlated with hotel employees' C_O (Fig. 2). In other words, the more employees were involved in their job, the higher customer orientation they displayed. Similarly, employees with a higher perception of pleasure/interest in tourism were also more customer-oriented. Thus Hypothesis 1 and Hypothesis 2 are supported by the empirical findings.

The study results also demonstrated that there were significant and positive correlations between C_O and R_P SERVICE and EX_R SRVICE. Thus it can be stated that higher levels of individual employees' customer orientation resulted in a higher level of hotel employees' role-prescribed and extra-role customer service. These findings give support for Hypotheses 3a and 3b.
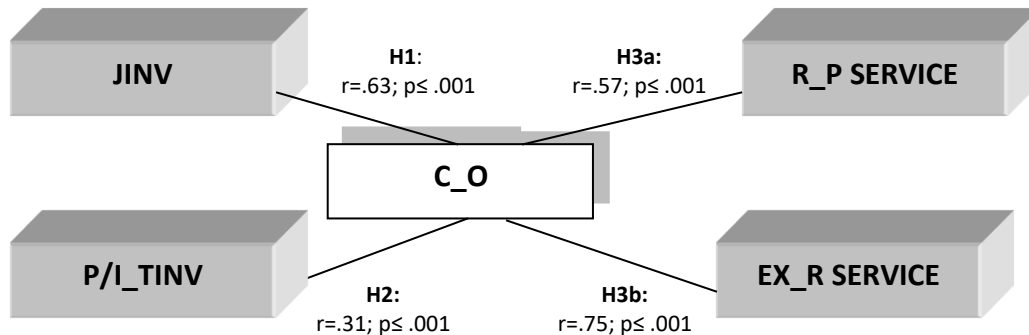

Figure 2: Verified model
Note: JINV (Job Involvement); P/I_TINV (Pleasure/Interest in Tourism); R_P SERVICE
(Role-Prescribed Customer Service); EX_R SERVICE (Extra-Role Customer Service)
Source: own research

Finally, multiple regression was conducted to checked whether C_O can be predicted based on JINV and P/I_TINV (Tab. 1). Factor scores were calculated by multiplying factor score coefficients and the standardized data.

Table 1: Results of multiple regression

	Customer Orientation			Collinearity Statistics	
	B	**t**	**p**	**Tolerance**	**VIF**
Job involvement	0.376	5.868	0.000	898	1,114
Pleasure/interest in tourism	0.137	2.145	0.033	898	1,114
Regression model:					
F	26.214				
R^2	0.193				
Adjusted R^2	0.186				

Source: own research

The overall regression model is a good fit for the data (F(2,219)=26.214; p <0.001; R^2 = 0.193). Additionally, the variance inflation factor (VIF) value shows that collinearity is not problematic in this study (Jarzemowska and Hajduk, 2015). The results show that both JINV (β =0.376; p≤0.001) and P/I_TINV (β =0.137; p=0.033) predict hotel employees' customer orientation in a statistically significant way, what simultaneously may strengthen this study's assumptions that both JINV and P/I_TINV can be critical factors of hotel employees' C_O. JINV and P/I_TINV jointly explain 19.3% of the variance in C_O.

5. DISCUSSION
This study throws new light on the understanding of the effect of tourism and job involvement on hotel employees' work outcomes and extends the research stream on the issue of customer orientation to the context of hospitality employees in Poland.

The study results revealed that by involvement in hospitality jobs, on the one hand, and taking pleasure/interest in tourism, on the other, hotel employees may experience "dual reinforcement" from the job and non-job related variables, which may strengthen their positive customer-oriented attitudes in their workplace. Customer orientation, in turn, appeared to be a useful tool to increase hotel employees' service behaviors, both the expected one and that of particular interest in the hospitality setting – the extra-role behavior. The job-fit theory provides support for these relationships, as employees who are more enthusiastic, talented and predisposed to their service jobs are more likely to achieve desired service behaviors, also having a tendency to go beyond the call of duty and provide even more than is expected of their roles and scripts (Chebat and Kollias, 2000; Ro and Chen, 2011). The findings of this study also provide many implications for managers. First. If managers do not adequately assess the degree of customer orientation of their new employees, they may miss a pivotal non-salary-based driver (Donavan et al., 2004). Thus the recruitment and selection process should involve an assessment of the level of customer orientation, as it signals a better job–person fit (Babakus et al., 2009). Second. To encourage hotel employees' involvement in tourism, hotel managers should by particularly concerned about the issue of work–life balance. The more that hospitality industry is working 365 days a year and 24 hours a day (Walker, 2014), additionally, high job demands require much employees' time and energy, as a result, leaving them less opportunity to engage in leisure activities during their time off (Wong and Lin, 2007). To overcome these challenges, it is important to implement work–life balance practices, such as giving more flexibility, particularly in work schedules, increasing employees' sense of control, and creating a more supportive work environment (see Duxbury and Higgins, 2003). That also refers to the idea of Corporate Social Responsibility, whose principles are recognized worldwide (Kizielewicz and Skrzeszewska, 2016). Third. Developing the job involvement culture and making work interesting and full of achievements may encourage employees to use a variety of their skills and talents and enhance their focus on customers' needs in order to provide them with satisfactory service.

6. CONCLUSION
This study analyzed selected antecedents and outcomes of employees' customer orientation and showed that both employees' interest and pleasure taken in tourism as well as their job-involvement may influence their customer orientation, and hence their service behavior. As with most research, this study also has some limitations. First. This study involved only selected hotels from Northern Poland, which limits a possibility to generalize the study results. Second. Although, under some condition self-rating data may provide valid measures of performance, it could be beneficial for future studies to use data from multiple sources (e.g. hotel guests, supervisors) to minimize the potential threat of the Common Method Bias (see Babakus et al., 2009). For future research, identifying and testing a variety of other determinants of customer orientation and its outcomes is recommended. Particularly, given the fact that employees may support a growth of the organization's innovativeness (Szelągowska-Rudzka, 2014), it could be interesting to incorporate employees' creativity into the research model, as "all innovation begins with creative ideas" (Amabile et al. 1996, p. 1154) and test it as a potential outcome of employees' customer orientation.

LITERATURE:
1. Amabile, T.M., Conti, R., Coon, H., Lazenby, J. ,Herron, M. (1996). Assessing the work environment for creativity, *The Academy of Management Journal* 39(5), 1154–1184.
2. Babakus, E., Yavas, U. , Ashill, N.J. (2009). The Role of Customer Orientation as a Moderator of the Job Demand–Burnout–Performance Relationship: A Surface-Level Trait Perspective, *Journal of Retailing 85,* 480–492.

3. Bettencourt, L.A., Brown, S.W. (1997). Contact employees: Relationships among workplace fairness, job satisfaction and prosocial service behaviors, *Journal of Retailing, 73 (1)*, 39–61.
4. Brown, T.J., Mowen, J.C., Donavan, D.T., Licata J.W. (2002). The Customer Orientation of Service Workers: Personality Trait Effects on Self- and Supervisor Performance Ratings, *Journal of Marketing Research 39 (1),* 110-119.
5. Chebat, J-Ch., Kollias, P. (2000). The Impact of Empowerment on Customer Contact Employees' Roles in Service Organizations, *Journal of Service Research 3 (1),* 66-81.
6. Cheng, Ch-H. (2011). A study of critical factors of the job involvement for hotel employees—Taking hotels in Taiwan as an example, *International Journal of Hospitality Management 30,* 990– 996.
7. Choi, C.H., Kim, T. (T)., Lee G., Lee, S.K. (2014). Testing the stressor–strain–outcome model of customer-related social stressors in predicting emotional exhaustion, customer orientation and service recovery performance, *International Journal of Hospitality Management 36,* 272–285.
8. Donavan, D. T., Brown, T.J., Mowen, J. C. (2004). Internal Benefits of Service-Worker Customer Orientation: Job Satisfaction, Commitment, and Organizational Citizenship Behaviors, *Journal of Marketing 68 ,* 128–146.
9. Duxbury, L., Higgins, Ch. (2003). Work-Life Conflict in Canada in the New Millennium. A Status Report, *Final Report October 2003*, Retrieved from: http://hrcouncil.ca/hr-toolkit/documents/rprt_2_e.pdf (05.2017).
10. Gilbert, D., Abdullah, J. (2004). Holiday taking and the sense of well-being, *Annals of Tourism Research 31 (1),* 103–121.
11. Global Code of Ethics for Tourism, UNWTO. Retrieved from: http://ethics.unwto.org/content/global-code-ethics-tourism (06.2017).
12. Gursoy, D., Gavcar, E. (2003). International leisure tourists' involvement profile, *Annals of Tourism Research 30 (4),* 906–926.
13. Hennig-Thurau T. (2004). Customer orientation of service employees. Its impact on customer satisfaction, commitment, and retention, *International Journal of Service Industry Management 15 (5),* 460-478.
14. Hooper, D., Coughlan, J. and Mullen, M.R. (2008). Structural Equation Modelling: Guidelines for Determining Model Fit, *Electronic Journal of Business Research Methods* 6(1), 53-60.
15. Huang, L-Ch., Ahlstrom, D., Lee, A. Y-P., Chen, S-Y., Hsieh M-J. (2016). High performance work systems, employee well-being, and job involvement: an empirical study, *Personnel Review 45 (2),* 296-314.
16. Jerzemowska, M., Hajduk, A. (2015). Wpływ rentowności przedsiębiorstwa na strukturę kapitału na przykładzie spółek akcyjnych notowanych na Giełdzie Papierów Wartościowych w Warszawie, *Zeszyty Naukowe, 2 (938),* Uniwersytet Ekonomiczny w Krakowie, 45–57.
17. Karatepe, O.M., Douri, B.G. (2012). Does Customer Orientation Mediate the Effect of Job Resourcefulness on Hotel Employee Outcomes? Evidence from Iran, *Journal of Hospitality and Tourism Management 19,* 133-142.
18. Kim, W. (2009). Customers' responses to customer orientation of service employees in full-service restaurants: a relational benefits perspective, *Journal of Quality Assurance In Hospitality & Tourism 10 (3),* 153–174.
19. Kizielewicz J., Skrzeszewska K. (2016). The role of non-governmental organizations in the field of sustainable development of cruise ship tourism, In: Primorac Z./ Bussoli C. / Recker N. (Eds.): *Book of Proceedings, 16th International Scientific Conference on Economic and Social Development: The Legal Challenges of Modern World*, Varazdin Development and

Entrepreneurship Agency, Faculty of Law, University of Split, Croatia, University North, Koprivnica, Croatia, Split, 2016, 549-557.

20. Kuruüzüm, A., Çetin, E.I., Irmak, S.(2009). Path analysis of organizational commitment, job involvement and job satisfaction in Turkish hospitality industry, *Tourism Review 64 (1),* 4-16.

21. Kwok L., Adams Ch. R. , Feng D. (2012). A comparison of graduating seniors who receive job offers and those who do not according to hospitality recruiters' selection criteria, *International Journal of Hospitality Management 31 (2),* 500-510.

22. Lau, G.T., Huang, S.B. (1999). The influence of task characteristics and job-related characteristics on retail salesperson selling orientation, *Journal of Retailing and Consumer Services 6,* 147-156.

23. Lee, G., Kim T. (T.), Shin, S.H. , Oh, I. K. (2012). The managed heart: The structural analysis of the stressor–strain relationship and customer orientation among emotional labor workers in Korean hotels, *International Journal of Hospitality Management 31,* 1067–1082.

24. Lee, J. (J), Ok, Ch. (2012). Reducing burnout and enhancing job satisfaction: Critical role of hotel employees' emotional intelligence and emotional labor, *International Journal of Hospitality Management 31(4),* 1101–1112.

25. Lee, J.(J), Ok, Ch. "M", Hwang, J. (2016). An emotional labor perspective on the relationship between customer orientation and job satisfaction, *International Journal of Hospitality Management 54,* 139–150.

26. Lee, K-J. (2014): Attitudinal dimensions of professionalism and service quality efficacy of frontline employees in hotels, *International Journal of Hospitality Management 41*, 140–148.

27. Li, Ch. (2016). Confirmatory factor analysis with ordinal data: Comparing robust maximum likelihood and diagonally weighted least squares, *Behavior Research Methods 48 (3),* 936-949.

28. Li, Y. (2000). Geographical consciousness and tourism experience, *Annals of Tourism Research 27 (4),* 863-883.

29. Liao C-S., Lee C-W. (2009). An Empirical Study of Employee Job Involvement and Personality Traits: The Case of Taiwan, *International Journal of Economics and Management 3(1),* 22 – 36.

30. McCabe S. (2009). Who needs a holiday? Evaluating social tourism, *Annals of Tourism Research 36(4),* 667–688.

31. McCabe, S., Johnson, S. (2013). The happiness factor in tourism: subjective well-being and social tourism, *Annals of Tourism Research 41*, 42–65.

32. Nunnally, J. C. (1978). *Psychometric theory*, (2nd ed.), NY: McGraw-Hill Book Company.

33. Ro, H., Chen, P-J. (2011). Empowerment in hospitality organizations: Customer orientation and organizational support, *International Journal of Hospitality Management 30 (2),* 422–428.

34. Rod, M., Ashill, N.J. (2010). The effect of customer orientation on frontline employees job outcomes in a new public management context, *Marketing Intelligence & Planning 28 (5)*, 600-624.

35. Sivesan, S., Karunanithy, M. (2014): Impact of Customer Orientation of Service Employees on Customer Satisfaction towards Retention in Finance Companies, *European Journal of Business and Management*, 6 (1), 25-29.

36. Suhartanto, D., Dean, D., Nansuri, R., Triyuni, N.N.(2018). The link between tourism involvement and service performance: Evidence from frontline retail employees, *Journal of Business Research 83,* 130-137.

37. Szelągowska-Rudzka K. (2014). Partycypacja bezpośrednia pracowników jako przykład innowacji organizacyjnej. In: Oniszczuk-Jastrząbek A., Gutowski T. (Eds.): *Przedsiębiorstwo w otoczeniu globalnym*. Instytut Transportu i Handlu Morskiego, Uniwersytet Gdański, InfoGlobMar, Gdańsk, 216 – 219.

38. Szelągowska-Rudzka K. (2015): Management Style as Determinant of Employees Direct Participation in ICT Industry - Case Study. In: Rouso J., (Ed.): *Proceedings of the 11th European Conference on Management Leadership and Governance*, ECMLG 2015. Military Academy, Lisbon, Academic Conferences and Publishing International Limited Reading, UK, 478-486.

39. Tajeddini, K. (2010). Effect of customer orientation and entrepreneurial orientation on innovativeness: Evidence from the hotel industry in Switzerland, *Tourism Management 31,* 221–231.

40. Tepeci, M., Bartlett, A.B. (2002). The hospitality industry culture profile: a measure of individual values, organizational culture, and person–organization fit as predictors of job satisfaction and behavioral intentions", *International Journal of Hospitality Management 21,* 151–170.

41. Tsaur, S.H, Wang, Ch-H., Yen, Ch-H., Liu, Y-Ch. (2014). Job standardization and service quality: The mediating role of prosocial service behaviors, *International Journal of Hospitality Management 40,* 130-138.

42. Tsaur, S-H., Lin, Y-Ch. (2004). Promoting service quality in tourist hotels: the role of HRM practices and service behavior, *Tourism Management 25(4),* 471–481.

43. Walker, J.R. (2014). *Introducing Hospitality*, Sixth Edition, Pearson New International Edition.

44. Wong, J-Y., Lin, J-H. (2007). The role of job control and job support in adjusting service employee's work-to-leisure conflict, *Tourism Management 28(3),* 726-735.

45. Yeh, Ch. M. (2013). Tourism involvement, work engagement and job satisfaction among frontline hotel employees, *Annals of Tourism Research 42,* 214–239.

46. Zopiatis, A.,Constanti, P.,Theocharous, A.L. (2014). Job involvement, commitment, satisf action and turnover: Evidence from hotel employees in Cyprus, *Tourism Management 41,* 129-140.

INVESTIGATION OF THE REIMBURSEMENT SCHEME IN CROATIAN PUBLIC HOSPITALS: A DATA ENVELOPMENT ANALYSIS APPROACH

Nikolina Dukic Samarzija
University of Rijeka, Faculty of Economics, Croatia
nikolina.dukic.samarzija@efri.hr

Andrea Arbula Blecich
University of Rijeka, Faculty of Economics, Croatia
andrea.arbula.blecich@efri.hr

Tomislav Najdek
Health Center Zagreb - West
tomislav.najdek@dzz-zapad.hr

ABSTRACT

Hospitals in Croatia are burdened with insufficient inflow of financial resources which has a negative influence on hospital solvency and financial results. In order to equalize hospital cost structure and stimulate hospital performance and quality at the same time, the Croatian Government introduced in 2006 the diagnosis-related groups payment scheme called DRG methodology. DRG is a system for classification of acute hospital inpatient treatments which enables standardization of hospital procedures, controlling costs, measuring efficiency, and quality in secondary and tertiary (hospital) health care. If hospitals improve their efficiency, an improvement in the efficiency of the health care system may also be expected. The purpose of this paper is to evaluate relative efficiency of public hospitals in Croatia based on DRG procedure K60B - diabetes without very severe and severe comorbidity and complications. The hospital level data were analysed using Data Envelopment Analysis which indicated that Croatian hospitals, regarding DRG K60B, operate at a similar efficiency level. This leads to the conclusion that introduction of the DRG payment system in Croatian hospitals has justified its purpose, at least within the observed DRGs. If we cumulatively observe the sources and the amounts of relative inefficiency, days of lying should be reduced the most - on average by 16.71%. The research results may serve to health policy makers as guidelines for more efficient use of health resources as this paper provides theoretical and practical contribution to the evaluation of relative hospital efficiency regarding the DRG reimbursement scheme.
Keywords: Diagnosis Related Groups, Data Envelopment Analysis, hospitals, indebtedness, reimbursement scheme

1. INTRODUCTION

Health care systems are complex and constantly changing in response to economic, technological, social, and historical forces. Much of their complexity stems from pronounced agency relations within the health care system. There are three major parties in any health care system: patients or health care users, health care providers or producers, and insurers or third-party payers. Government as a third-party payer monitors and influences the behaviour (Dukić et al. 2012) of health care providers as means of controlling medical costs and assuring adequate level of quality. As most health expenditures are allocated for the hospital sector, an appropriate method of financing and hospital reimbursement must be applied. Health policy makers have introduced reimbursement by Diagnosis Related Groups (DRGs) in many countries. This transition from retrospective (e.g. fee-for-service) to prospective (e.g. fixed price for DRG) system started in the United States of America (USA) in 1983 under the Medicare Program

(Street et al., 2011). All the versions of DRG-based payments that are currently applied in the most developed countries are based on a system developed at Yale University in the USA (Robert B. Fetter, PhD, Yale School of Management; John D. Thompson, MPH, Yale School of Public Health) called "Diagnosis Related Groups" (Fetter et al., 1980). The scheme first codes the patient's case into a DRG. This coding mainly depends on the illness (diagnosis), the procedure to cure the illness and the patient's demographic characteristics. For each DRG case the hospital receives a fixed reimbursement that is set in accordance with estimates of efficient treatment costs. Although all variants of DRG-based payments stem from a system developed by the team at Yale University in the USA, it is easy to get lost in the specificities of each country's system (Busse et al., 2011). Namely, each country applying the DRG system is given a certain freedom in further development of the system based on their specifics relating to economic indicators and the general condition of the population which is the subject of treatment. Hence, Quentin et al. (2011) introduced DRG patient classification characteristics in the following manner: hospitals routinely collect patient data to classify patients into manageable groups (DRGs), which are intended to be clinically meaningful and economically homogenous. DRG-based hospital payment systems have the potential to enhance hospital efficiency and there are many studies aimed at investigating the effects of the introduction on DRG-based payments on the indicators of efficiency (such as activity and length of stay) across different countries (Street et al., 2011). However, establishing causation is difficult due to different features of national health care systems and the way DRG-based hospital payment system is operated and as such, it is not within the scope of this paper. Given that DRG classification should provide a concise measure of hospital activity, facilitate comparisons of hospital costs, quality and efficiency, and contribute to increased transparency in hospitals, the aim of this paper is to investigate the relative efficiency of public hospitals in Croatia based on DRG procedure K60B - diabetes without very severe and severe comorbidity and complications.

2. HOSPITAL REIMBURSEMENT SCHEME IN CROATIA

In the Republic of Croatia, the legislative body has passed the 2006-2011 National Strategy for the Development of Healthcare which introduced DRG payment system (Croatian: dijagnostičko terapijske skupine - DTS) for the treatment of acute hospital patients in secondary and tertiary health care[1]. Croatia has decided to use the Australian version of the system called Australian Refined – Diagnosis Related Groups (version 5.1) which covers 665 groups (Strizrep). The classification differs regarding similarity criteria used for determining groups. In terms of health care, the most important similarity measures for cases are health problems (diagnosis, condition, and need for care), care outcome (actual health condition), manner of care (intervention, procedure, etc.), usability of care (value, equivalent value in money, healthcare benefit), prognosis (expected health condition), and costs of care (utilization of resources). Introduction of the DRG system should have an impact on reducing costs, increasing quality and, ultimately, decreasing the duration of hospitalization. The fundamental logic of the DRG system is that, after defining the "health care product", all direct costs associated with this product are incorporated into the cost of its production. DRG calculation does not include indirect costs, e.g., capital costs, costs of educating personnel, costs for clinical trials, and the like. This manner of payment is also called episode-based payment, where an episode covers the period from admission to discharge from a hospital. The notion is that defining an episode also means defining medical product. Definition of a medical product is the first step in developing the DRG system and defining product costs. In this way, the insurer financing

---

[1] Health care in the Republic of Croatia is categorized as primary, secondary and tertiary. Primary health care is also called outpatient health care which includes implementing prevention, diagnostics, and treatment. Secondary health care is also called specialist health care, and primarily refers to hospital health care. In addition, there is also tertiary hospital health care which includes the most complex forms of health care from specialized fields accompanying scientific and research work.

implementation of health care gains a clear insight into the quantity and quality of contracted and provided services - for each type of service, there must be a defined amount of payment. The payment amount is obtained in such a way that the coefficients for each group are multiplied by the baseline value (Strizrep). The baseline value is expressed as a monetary value and is determined by the government, or the state health insurance fund. In the process of initial calculation of the coefficients and baseline values, data on actual hospital costs in the previous period are used, thereby ensuring stability of the health care system. The role of the DRG system in the Republic of Croatia can be viewed as a direct system of hospital cost management at the second level of protecting financial stability of health care. The first level of protecting the stability of health care is the hospital limit, i.e., total payments to a hospital is defined in advance by the insurer. Additionally, there is also a limit to the total scope of payments for certain types of expensive and complex procedures. Therefore, further development and adjustment of the DRG hospital payment system ensures proper implementation of health care, financial stability of the health care system, and transparency of the health care product.

3. METHODOLOGY

Data Envelopment Analysis (DEA) is a linear programming technique for the evaluation of relative efficiency of peer entities called decision-making units (DMUs). It allows multiple inputs and multiple outputs without any assumption on data distribution. The efficiency is defined as the ratio between weighted sum of inputs and weighted sum of outputs. DMU is efficient if the ratio is equal to 1 (θ =1), otherwise, if the ratio is less than 1 (θ <1), DMU is inefficient. Originally, DEA is used for measuring relative efficiency in the public sector, but its use was soon extended to the private sector as well. This method is commonly used to evaluate the efficiency in healthcare (Khushalani, Ozcan, 2017; Rabar, 2010), education (Pietrzak, Pietrzak, Baran (2016), Arbula Blecich, Tomas Žiković, 2016; Arbula, 2012; Thanassoulis et al., 2011), banks (Fukuyama, H., Weber, W. L., 2015; Řepková, 2014) and other. This method is commonly used to evaluate the efficiency of hospitals, schools, universities, and banks. One of the main advantages of this method is that each relatively inefficient DMU (less than 100% efficiency) is compared only with similar DMUs that had been evaluated efficient. A projection for relatively inefficient units is also provided to make them efficient. The DEA was introduced in its present form by Charnes, Cooper and Rhodes (CCR model) (1978). They presented an innovative technique for comparing the efficiencies of DMUs based on the DMUs' input and output observed values. Their linear programming formulation allowed multiple inputs and multiple outputs to measure technical efficiency of the observed DMUs assuming constant returns to scale. Their model used an input orientation. Banker, Charnes and Cooper (BCC model) (1984) extended the CCR model (1984) by introducing variable returns to scale (VRS). We assume that $s = 1 \ldots S$ production units, with inputs x_s^T ($x_{s1},.., x_{sm}$)= and outputs $y_s^T = (x_{s1},.., x_{sn}$). Column vectors X_s and Y_s form the Sth columns of matrices *X and Y*. Furthermore, we assume that $\lambda^T = (\lambda_1,..., \lambda_s)$ is a non-negative vector and $e^T=(1,..,1) \in R^s$ is a vector of unit values (Fernandes Wanke, 2013). CCR and BCC input-oriented models are shown in Equations 1 and 2.

CCR – input-oriented

$$min_{\theta\lambda}\theta$$
$$s.t.\,\theta x_s - X\lambda \geq 0$$
$$Y\lambda \geq y_s$$
$$(1)$$
$$\lambda \geq 0$$

BCC – input-oriented

$$min_{\theta\lambda}\theta$$
$$s.t.\,\theta x_s - X\lambda \geq 0$$
$$Y\lambda \geq y_s$$
$$(2)$$
$$e\lambda = 1$$

Besides providing efficiency scores for each DMU, DEA also ensures additional information such as reference set and projections that are important for inefficient DMUs. The value θ defines the output efficiency and if θ equals one, DMU is efficient. It is important to underline that efficient DMUs tend not to present any slack, unlike inefficient DMUs (Lin and Tseng, 2007).

4. DATA AND RESULTS

This study applies DEA for assessing the relative technical efficiency of DRG classification of diabetes without comorbidity and complications - K60B in Croatian hospitals for year 2017. Four inputs (total liquidated for medicines, total liquidated for materials, total liquidated for other, and number of days of lying) and one output (number of cases/discharge) are used in the analysis. The input variables included in the analysis are relevant from the aspect of DRG payments because the value of DRGs is set upon the previous year's cost of materials, medicines and other costs multiplied by average length of stay (Toth, 2015). Number of cases is a performance indicator which measures hospital activity relevant for DRG payments given that it is an activity-based reimbursement system. The input and output data were provided by CEZIH (Integrated health care information system of the Republic of Croatia, 2017) and the analysis was conducted with the software DEA-Solver Pro 11.1. Table 1 presents the summary statistics of inputs and outputs used in the model for K60B.

Table 1: Statistics on input and output variables for K60B in 2017

	Input	**Input**	**Input**	**Input**	**Output**
	Total liquidated for medicines	Total liquidated for materials	Total liquidated for other	Days of lying	Number of cases
Max	158053	308274	4057598	3870	1231
Min	199.35	0	7150.65	14	2
Average	24354.5	34238	374862	585.3	116.8
SD	30747.1	63807.8	39703.8	754.4	224.4

Source: Authors' calculation

In the evaluation of relative efficiency of hospitals using DEA, an important precondition is that input and output variables have non-negative values. Additionally, positive correlation between inputs and outputs is necessary during the selection of appropriate inputs and outputs. Input and output correlation coefficients for K60B are presented in Table 2.

Table following on the next page

Table 2: Input and output correlation coefficients for K60B in 2017

	Input	Input	Input	Input	Output
	Total liquidated for medicines	Total liquidated for materials	Total liquidated for other	Days of lying	Number of cases
Total liquidated for medicines	1	0,88534	0,9135	0,94008	0,92292
Total liquidated for materials	0,88534	1	0,90332	0,93127	0,91696
Total liquidated for other	0,9135	0,90332	1	0,95385	0,99926
Days of lying	0,94008	0,93127	0,95385	1	0,95815
Number of cases	0,92292	0,91696	0,99926	0,95815	1

Source: Authors' calculation

There is a high positive correlation among the input and output variables. DEA in general deals with highly correlated variables. It is found that ommitment of highly correlated relevant variables causes inconsistency of efficiency estimates of some DMUs (Dyson *et al*., 2001; Ramirez Hassan, 2008). After selecting input and output variables, an appropriate DEA model has to be selected based on returns to scale. To decide whether to use the CCR or the BCC model, data were tested with both models. The CCR model assumes constant returns to scale (CRS) and the BCC model variable returns to scale (VRS). Given that the goal of hospitals is rational management of available resources, input orientation has been used. Comparison of the results of CCR – input-oriented and BCC – input-oriented models shows substantial differences (Table 3).

Table 3: Relative efficiency with the use of CCR (CRS) and BCC (VRS) input-oriented models for K60B

	K60B–CCR-I	K60B–BCC-I
No. of Efficient DMUs	13	18
No. of Inefficient DMUs	15	10
Average Efficiency	0.9862	0.9934

Source: Authors' calculation

For K60B, the number of efficient DMUs with the BCC model is considerably larger than with the CCR model. There are almost 1.8 times more efficient hospitals in the BCC model than in the CCR model. Also, CCR models have lower efficiency results than the BCC model. According to the results, it is recommended to use the BCC model because they imply that the observed hospitals operate under VRS – to allow operation of hospitals at an inefficient scale size (Herwartz and Strumann, 2012). The results of relative efficiency of Croatian hospitals for K60B using BCC input- oriented model and projection values for relatively inefficient hospitals aiming to achieve relative efficiency are presented in Table 4.

Table following on the next page

Table 4: Efficiency results and reference set for DRG K60B

No.	DMU	Result	Change (%) of the input *Total liquidated for medicines*	Change (%) of the input *Total liquidated for materials*	Change (%) of the input *Total liquidated for other*	Change (%) of the input *Number of days of lying*
1	OSIJEK CHC	1	0	0	0	0
2	RIJEKA CHC	1	0	0	0	0
3	SESTRE MILOSRDNICE CHC	0.9641	3.595	3.595	3.595	15.95
4	SPLIT CHC	0.9792	2.084	2.084	2.084	36.121
5	ZAGREB CHC	0.9888	1.117	37.576	1.117	45.824
6	DUBRAVA CH	0.9862	1.378	1.378	1.378	10.944
7	MERKUR CH	1	0	0	0	0
8	SVETI DUH CH	0.9906	0.938	0.938	0.938	0.938
9	BJELOVAR GH	0.9799	2.012	2.012	2.012	25.788
10	DUBROVNIK GH	1	0	0	0	0
11	GOSPIĆ GH	1	0	0	0	0
12	KARLOVAC GH	1	0	0	0	0
13	KNIN OPĆA I VETAR.BOL.HRVATSKI PONOS GH	1	0	0	0	0
14	KOPRIVNICA GH	0.9792	2.08	2.08	2.08	2.08
15	NAŠICE GH	0.9701	2.987	2.987	2.987	2.987
16	OGULIN BOL. BRANITELJA DOM. RATA OGULIN GH	1	0	0	0	0
17	POŽEGA GH	1	0	0	0	0
18	PULA GH	1	0	0	0	0
19	SISAK GH	1	0	0	0	0
20	SL. BROD GH	1	0	0	0	0
21	ŠIBENIK GH	1	0	0	0	0
22	VARAŽDIN GH	1	0	0	0	0
23	VINKOVCI GH	1	0	0	0	0
24	VIROVITICA GH	0.9932	0.679	0.679	0.679	0.679
25	VUKOVAR I BOLN. HRV. VETERANA GH	1	0	0	0	0
26	ZABOK I BOL.HRVATSKIH VETERANA GH	1	0	0	0	0
27	ZADAR GH	0.9843	1.574	1.574	1.574	25.78
28	ČAKOVEC COUNTY HOSPITAL	1	0	0	0	0

Source: Authors' calculation

18 hospitals out of 28 have been identified as efficient since, by definition, a DMU is efficient if $\theta = 1$ and s_i^-, $s_r^+ = 0$ (input and output slacks are represented with s_i^- and s_r^+). Evaluation of relative efficiency using the DEA provides information on the current level of relative efficiency.

If we observe hospitals with the distinction of secondary and tertiary category[2], hospitals in secondary health care have the average efficiency score of 0.9953 (15 out of 20 are efficient), and the hospitals in tertiary health care have the average score of 0.9886 (3 out of 8 are efficient). Additionally, projections on the efficiency frontier for each relatively inefficient DMU provide information on how to eliminate inefficiency. It identifies the sources of relative inefficiency and provides information on changes that relatively inefficient DMU ($\theta < 1$) should made to become relatively efficient. Projections, i.e. necessary changes are presented as a percentage change of input variables (because of input orientation) with the aim of achieving relative efficiency (see Table 4). If we observe the least efficient hospital in tertiary health care, Sestre Milosrdnice CHC, it should reduce the total liquidated for medicine, the total liquidated for materials, and the total liquidated for other by 3.595% each and the number of days of lying by 15.95% to become relatively efficient. The hospital in secondary health care ranked lowest - Našice GH, should reduce all inputs by 2.987% to achieve relative efficiency. Other projections of relative efficiency on the efficiency frontier of Croatian hospitals for DRG K60B are presented in Table 4. If we cumulatively observe the sources and the amounts of relative inefficiency of inefficient hospitals for DRG K60B classification, to achieve relative efficiency, the total liquidated for medicine should be reduced on average by 1.85% (min 0.679, max 3.595), the total liquidated for materials by 1.68% (min 0.679, max 3.595), and the total liquidated for other by 1.84%. Days of lying, among all other inputs, must be reduced the most, by 16.71% on average (min 0.68, max 45.82).

5. CONCLUSION

These findings are interesting because they show that Croatian hospitals regarding DRG K60B operate at a similar level of efficiency. This leads to the conclusion that introduction of the DRG payment system in Croatian hospitals has justified its purpose, at least with the observed DRGs. Nevertheless, Busse et al. (2006) indicated that, besides measuring efficiency improvements, it is important to examine the extent to which low-risk patients are favored at the expense of high-risk patients (cream-skimming), provision of unnecessary treatment (for example, supplier-induced demand), occurrence of data manipulation or fraud, or compromise of health care quality. Experience with DRGs has shown that, for instance, in order to increase reimbursement, hospitals tend to "upcode" cases into more treatment-intensive DRGs than actually required. Moreover, DRG reimbursement can incentivize hospitals to discharge patients prematurely, which may lead to costly re-admissions later on. Furthermore, there are methodological issues involving the correct incorporation of capital and overhead costs into DRG rates and the appropriate classification of complex cases. One of the strengths (Street et al., 2011) of DRG-based hospital payment is its design that encourages greater efficiency. In the absence of market competition, we find that relative efficiency analysis is important information for hospital managers and policy makers. Given that the basis of the DRG system is cost management, in order to identify cost drivers of hospital products (that is, of DRGs) and to manage the production of DRGs, hospital managers have the incentives to introduce or optimize the existing cost-accounting systems. Only high-quality cost-accounting systems (Busse et al., 2011) can provide timely and detailed information about the costs of different inputs in the production process. Adequate hospital payment system is only a part of the solution (the financial part) for the efficient use of health care services. The other part of the solution, almost equally important, is the general practitioners' (GP) payment system (also known as "dijagnostičko terapijski postupci" - DTP) that should ensure quality control as well as efficient utilization of health care resources.

---

[2] The tertiary-level institutions in addition to standard medical services also provide the most complex forms of health care which is associated with scientific and research work and the use of expensive and cutting-edge equipment.

Within the DRG system, special emphasis is placed on the role of prevention by incentivizing GP's in conducting and referring patients to preventive activities. This has proven to be important for early detection of disease (Dukic et al. 2015) and reduction of costly medical procedures (Cerović et al. 2016). Given that DRG in secondary and tertiary health care and DRG in primary health care are fairly new and still developing, they are very interesting topics for future scientific research, especially using the methods for causal inference.

LITERATURE:
1. Arbula, A. (2012). Using Data Envelopment Analysis to Evaluate the Efficiency of Higher Education Expenditure in Europe, Journal of International Scientific Publications: Economy & Business. 6, 59-69.
2. Arbula Blecich, A., Tomas Žiković, I. (2016). Evaluation of relative efficiency of higher education institutions of economic orientation, 5th International Scientific Symposium „Economy of Eastern Croatia – Vision and Growth, Faculty of Economics, Osijek, Croatia, 2016. 368-376.
3. Banker, R. Charnes, A. and Cooper, W.: (1984). Some models for estimating technical and scale inefficiencies in data envelopment analysis, *Management Science*. 30(9): p. 1078–1092.
4. Busse, R. Geissler, A. Quentin, W, Miriam, W. (2011). *Diagnosis-Related Groups in Europe: Moving Towards Transparency, Efficiency and Quality of Hospitals*. World Health Organization on behalf of the European Observatory on Health Systems and Policies. p. 28. Retrieved 10.1.2018 from
   http://www.euro.who.int/__data/assets/pdf_file/0004/162265/e96538.pdf.
5. Busse, R. Schreyo J. and Smith, P. C. (2006). Editorial: Hospital case payment systems in *Europe. Health Care Manage Sci*. 9: p. 211–213. DOI 10.1007/s10729-006-9039-7.
6. Cerović, Lj., Dukić Samaržija N. and Prša, L. (2016). *Preventive Healthcare and its Economic Implications*. Economy of Eastern Croatia - Vision and Growth / Mašek Tonković, A. (ur.). - Osijek : Sveučilište Josipa Jurja Strossmayera u Osijeku, Ekonomski fakultet u Osijeku. p. 732-743.
7. Cerović, Lj., Dukić, N. and Horvat T. (2012). *The agency problem in healthcare and the importance of incentives*. 4th International Scientific Conference "Knowledge and Business Challenges of Globalisation in 2012". p. 61-68.
8. Charnes, A. Cooper, W. and Rhodes, E. (1978). Measuring the efficiency of decision making units. *European Journal of Operational Research*, 2(6): p. 429-444.
9. Dukić, N., Tomas Žiković, I. and Janković, S. (2015). *Towards the Efficient use of Public Healthcare Resources in Croatia,* Economy of eastern Croatia yesterday, today, tomorrow. Josip Juraj Strossmayer University of Osijek, Faculty of Economics, Croatia, vol. 4, p. 294-304.
10. Dyson, R. G. Allen, R. Camanho, A. S. Podinovski, V. V. Sarrico, C. S. Shale E.A. (2001). Pitfalls and protocols in DEA. *European Journal of Operational Research*. 132(2): p. 245-259.
11. Fetter, R. B. Shin, Y. Freeman, J. L. Averill R. F. and Thompson J. D. (1980). Case Mix Definition by Diagnosis-Related Groups. *Medical Care*. 18(2): p. 1-53.
12. Fernandes Wanke, P. (2013). Evaluating efficiency in the Brazilian trucking industry, *Produção*. 23(3): p. 508-524.

13. Fukuyama, H. and Weber, W. L. (2015). Measuring Japanese bank performance: a dynamic network DEA approach. Journal of Productivity Analysis. 44: p. 249-264.
14. Herwartz, H. and Strumann, C. (2012). On the effects of prospective payment on local hospital competition in Germany, *Health Care Management Science*, 15: p. 48-62.
15. Integrated health care information system of the Republic of Croatia (CEZIH) (2017). Retrieved 10. 12. 2017 from http://www.cezih.hr/index.html.
16. Khushalani, J. and Ozcan, Y.A. (2017). Are hospitals producing quality care efficiently? An analysis using Dynamic Network Data Envelopment Analysis (DEA). Socio-Economic Planning Sciences. 60: p. 15-23.
17. Lin, L. C. and Tseng, C. C. (2007). Operational performance evaluation of major container ports in the Asia-Pacific region. *Maritime Policy & Management*. 34(6): p. 535-551.
18. National Strategy for the Development of Healthcare 2006-2011 (2006). Retrieved 20.2.2017 from https://narodne-novine.nn.hr/clanci/sluzbeni/2006_06_72_1719.html.
19. Pietrzak, M. Pietrzak, P. and Baran, J. (2016). Efficiency assessment of public higher education with the application of Data Envelopment Analysis: The evidence from Poland, Journal of Applied Knowledge Management, 4(2): p. 59-73.
20. Rabar, D. (2010). Ocjenjivanje efikasnosti poslovanja hrvatskih bolnica metodom analize omeđivanja podataka. Ekonomski pregled. 61(9-10): p. 511-533.
21. Ramirez Hassan, A. (2008). *Consequences of Omitting Relevant Inputs on the Quality of the Data Envelopment Analysis Under Different Input Correlation Structures*. Center for Research in Economics and Finance (CIEF), Working Papers, No. 08-01. Retrieved 6.12.2017 from https://ssrn.com/abstract=2476367.
22. Řepková, I. (2014). Efficiency of the Czech Banking Sector Employing the DEA Window Analysis Approach, Procedia Economics and Finance, 12: p. 587-596.
23. Street, A. O'Reilly, J. Ward, P. and Mason, A.: (2011). *DRG-based hospital payment and efficiency: Theory, evidence, and challenges* in Diagnosis-Related Groups in Europe: Moving Towards Transparency, Efficiency and Quality of Hospitals. (ed.) Busse, R. Geissler, A. Quentin, W, Miriam, W. World Health Organization on behalf of the European Observatory on Health Systems and Policies. Retrieved 10.1.2018 from http://www.euro.who.int/__data/assets/pdf_file/0004/162265/e96538.pdf.
24. Strzirep, T. *Dijagnostičko-terapijske skupine (DTS): priručnik za zdravstvene radnike*. Hrvatski zavod za zdravstveno osiguranje. Retrived 14.12.2017 from http://mi.medri.hr/assets/DTS_prirucnik.pdf
25. Thanassoulis, E. Kortelainen, M., Johnes, G. and Johnes, J. (2011). Costs and Efficiency of Higher Education Institutions in England: A DEA Analysis. Journal of the Operational Research Society. 62 (7): p. 1282-1297
26. Toth, J., Kramar Poljak, T. Koren, S., Lučić, A., Jovanović, M. (2015). *Cijene zdravstvenih usluga kao determinanta rezultata poslovanja zdravstvenih ustanova.* (PPT presentation). Hrvatski zavod za zdravstveno osiguranje. Retrieved 21.2.2017 from http://www.hdmvzo.com/dokumenti/13kongres_prezentacije/Prezentacija%20-%20cijene.pdf.
27. Quentin, W. Geissler, A. Scheller-Kreinsen, D. and Busse, R. (2011). Understanding DRGs and DRG-based hospital payment in Europe in *Diagnosis-Related Groups in Europe Moving towards transparency, efficiency and quality in hospitals.* (ed.) Busse, R. Geissler, A. Quentin, W, Miriam, W. World Health Organization on behalf of the European Observatory on Health Systems and Policies. Retrieved 10.1.2018 from http://www.euro.who.int/__data/assets/pdf_file/0004/162265/e96538.pdf.

MEASURING FINANCIAL EFFECTS OF BUILDING RESTORATION IN CROATIA

Domagoj Sajter
Associate Professor at Faculty of Economics in Osijek, Croatia
sajter@efos.hr

ABSTRACT

The purpose of this paper is to quantify (in monetary terms) effects of building renovation in Croatia by comparing pre- and post- renovation energy expenses. Ex-post, bottom-up financial analysis was done by applying panel-data methodology on an initial sample of 495 public buildings which contained 49,744 observations – monthly bills, which add up to a total of 513.5 million HRK. The fixed-effects model exhibits average savings which amount to approx. 13,000 HRK yearly, per building. The important contribution of this paper lies in collecting raw data, filtering it, and applying contemporary econometric methodology in order to estimate micro-effects of nation-wide energy-efficiency programs.
Keywords: energy efficiency, financial effects, profitability

1. INTRODUCTION

Due to its strong impact on the environment and the economy, energy efficiency is among the top strategic priorities in most developed countries. European Commission presented legislative proposals and measures in November 2016 that aim to boost investments in clean energy related sectors which covered energy efficiency, renewable energy, etc. As its first main goal these proposals affirmed "putting energy efficiency first" (EC, 2016a). Buildings account for 40% of Europe's total energy consumption, but around 75% of the buildings are energy inefficient (EC, 2016b). A considerable amount of effort by the EU institutions goes into improving energy efficiency of the buildings. Energy efficiency (within the category of "energy union and climate") is among the ten top priorities of the European Commission for the period of 2015 to 2019. European Structural and Investment Fund will distribute €18 billion to energy efficiency, €6 billion to renewable energy (particularly in buildings) and €1 billion to smart distribution networks. Having in mind the evident importance of the energy efficient buildings, the purpose of this paper is to estimate financial effects of building restoration providing energy efficiency improvements in Croatia. Financial consequences of buildings' energy consumption and efficiency are insufficiently investigated in Croatia. Energy efficiency per se is widely examined within engineering and construction. Croatian academic journals' portal "Hrčak" (SRCE - University of Zagreb, University Computing Centre, 2018) was explored, and a review of selected papers published in Croatia regarding the subject of this article is henceforth reported. Hrs Borković (2009) presented the regulatory framework and the implementation methodology for energy certification of buildings in Croatia. Pavković, Zanke & Čačić (2010) analysed results of selected energy audits and preliminary energy studies of public buildings in Croatia, and gave technical evaluation of building components' energy efficiency. Operating cash flow of a single, prototypical household that built a passive house in Czechia was in the focus of interest of Chovancová, Kocourková, & Kozumplíková (2014). However, we found no previous studies which would estimate financial effects of energy-efficiency-related investments in Croatian buildings, and this paper attempts to fill this gap. A new dataset was obtained from the Croatian government Agency for Legal Trade and Real Estate Brokerage (APN, 2018) and panel data methodology was applied. As a part of an ongoing Project (see footnote 1), this paper extends the findings and builds upon the dataset obtained and developed by the Project participants. The structure of the paper is as follows.

After this introductory chapter, the methodology is presented. The following, third chapter describes the results. Finally, the fourth chapter concludes.

2. METHODOLOGY

According to the framework presented by Sajter (2017) this paper uses bottom-up, ex-post, micro approach to evaluation of financial effects of energy efficiency projects. Panel data methodology was applied because it combines cross-section with time-series. Such longitudinal analysis contains additional variability which affords wider scope of possibilities than time-series only or cross-section only (Kennedy, 2008). Among other advantages, "[p]anel data give more informative data, more variability, less collinearity among the variables, more degrees of freedom and more efficiency" (Baltagi, 2001, p. 5). One of the strongest advantages of it is its ability to control for unobserved heterogeneity; if it is time invariant then multiple observations per unit could be manipulated to sweep away the unobserved heterogeneity. On the other hand, if unobserved heterogeneity is individually invariant then multiple observations per time period could be manipulated. It can control for individual fixed effects as well as for period fixed effects. It is possible, however, that unobserved heterogeneity is random: all of these setups – pooled OLS, fixed and random effects – will be tested. Pooled OLS (or population-averaged) is the easiest approach in panel data estimation: we assume that $\beta_i = \beta_0$ for all i = 1 ... N, or that it is identical for all observations:

$$y_{it} = \beta_0 + \beta_1 x_{1it} + \ldots + \beta_k x_{kit} + \epsilon_{it} \text{ , where } i = 1,\ldots N, t = 1,\ldots N, u_{it} = 0.$$

The pooled OLS can be regarded as a restricted model by constraining all intercepts to be equal. This assumption is testable with the fixed and random effects models. Individual-specific effects model is the one where α_i is either a fixed or a random effect. The intuition here is that there might be group specific traits that we cannot observe/measure but do not change over time, or over groups. This is convenient because they can be agglomerated in the specific intercept term. There are two kinds of information in cross-sectional time-series data: the cross-sectional information reflected in the changes between subjects (buildings), and the time-series or within-subject information reflected in the changes within buildings. Between effects are estimated by using the cross-sectional information in the data, while fixed effects by using the time-series information in the data. The random-effects estimator is a matrix-weighted average of previous two results. Panel data with fixed effects examines individual differences in intercepts, assuming identical slopes and a constant variance across groups:

$$y_{it} = (\beta_0 + u_{it}) + \beta_1 x_{1it} + \ldots + \beta_k x_{kit} + v_{it} \text{ , where } i = 1,\ldots N, t = 1,\ldots N.$$

Random effects estimates dummy variables as an error component:

$$y_{it} = \beta_0 + \beta_1 x_{1it} + \ldots + \beta_k x_{kit} + (v_{it} + u_{it}), \text{ where } i = 1,\ldots N, t = 1,\ldots N.$$

3. DATA AND RESULTS

This research is based on a real dataset obtained from the Croatian Agency for Legal Trade and Real Estate Brokerage (APN, 2018). This agency is authorised by the Ministry of Economy to manage the centralized information system that monitors energy efficiency in Croatian public buildings (Energy Management Information System – ISGE). Public buildings include administrative, cultural, educational, sport, health, and general buildings where public services are provided and are completely or partially owned or rented by the government. The initial dataset contained 2,048 public buildings in Croatia with 141 attributes, including geospatial,

construction, heating, cooling, meteorological and energy data (Zekić-Sušac, 2017). First insight into the data revealed that pre-processing is needed, as there were strong outliers within. After initial outlier exclusion this paper focused on two variables:

a) monthly expenses (utility bills) for electrical energy for 1,760 buildings in the period from January 2006 to August 2017, and
b) the information about the year of last restoration.

However, all buildings did not have all the data (e.g. some buildings had data for 137 months, while other had for only two months), and because of enormous fluctuations in energy costs in subsequent months for some of the buildings it was apparent that the data for some of them was incorrect[1]. Therefore, the database had to be restricted to a sample which could have comparable and reliable data. The sample was subsequently constructed in following steps:

1. first, the buildings which did not have total amount of energy expenses with the sum of at least 250.000 HRK were excluded,
2. second, the buildings whose coefficient of variation (σ/μ) of monthly electricity bills was higher than 50% were left out,
3. the buildings who had bills in amounts of less than 100 HRK were excluded,
4. the period was restricted to January 2007 to March 2017 because of incomplete data outside this period.

These steps were taken in order to eliminate buildings whose data was not trustworthy either because of immaterial total energy expenses to be considered (steps 1 and 3), or because of the too large fluctuations in the data (step 2). This reduced the database to a sample of 495 buildings which contained 49,744 observations – monthly bills which add up to a total of 513.5 million HRK (Table 1).

Table 1. Summary statistics for the sample of 495 buildings (author's calculations)

	Monthly electricity bills
No. of observations	49,744
Mean (HRK)	10,323.85
Median (HRK)	6,319.23
Maximum (HRK)	373,913.20
Minimum (HRK)	105.46
Std. Dev. (HRK)	16,428.89
Jarque-Bera, p	0.00
Sum (HRK)	513,549,452.29

The seasonal variation of energy use within a year is visible by plotting the median as a measure of central tendency of electricity bills (Figure 1). The yearly pattern clearly displays a steep decline in energy usage in July and August (vacations), and pikes during heating period (December to February).

---

[1] This is due to manual input of the data into the database by the building users. They obviously sometimes either entered an extra number (or two), or missed some, which made meaningful analysis in some cases impossible.
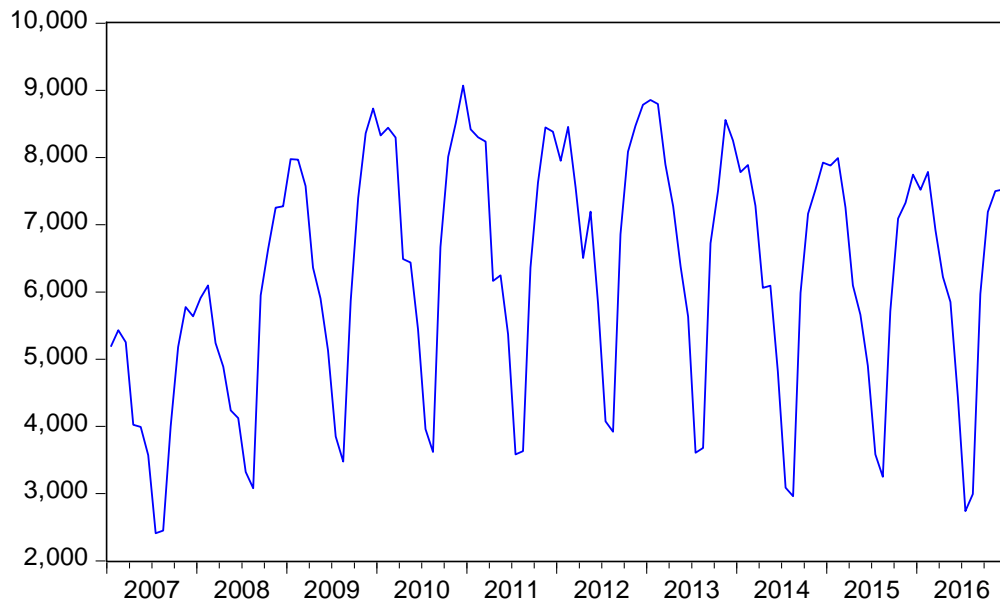
Figure 1. Monthly median of energy bills, 2007-01 to 2016-12, for 495 buildings, in HRK (author's work)

Since the variable "year of last restoration" is given only by year, the monthly data needed to be aggregated to a yearly level. The advantage of aggregation from a monthly to a yearly level is in absence of seasonal variation which is lost by accumulating monthly bills to the year-level. There is a growth trend which peaks in 2012 and inverses afterwards (Figure 2).
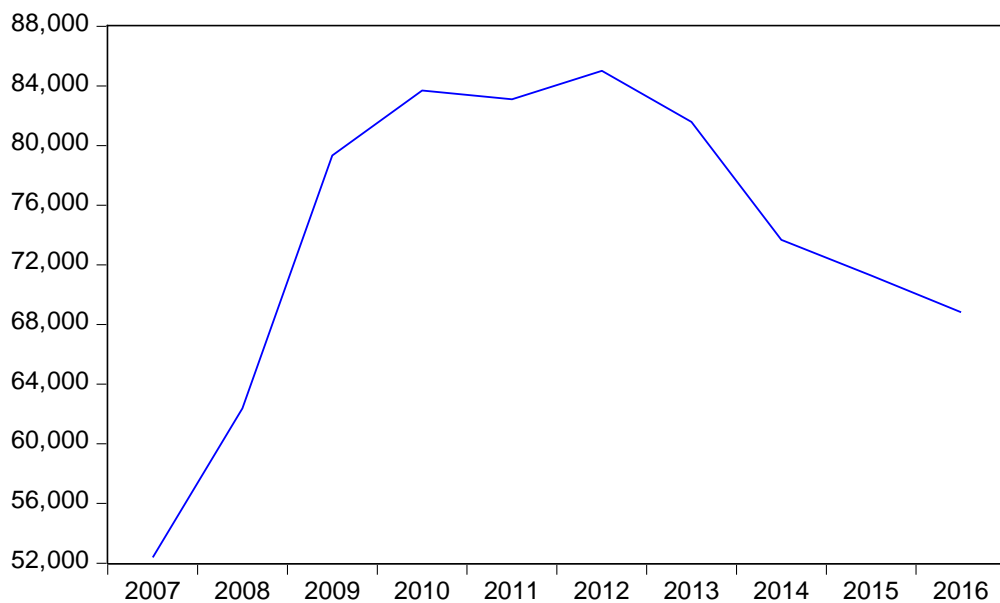
Figure 2. Yearly median of energy bills, 2007 to 2016, for 495 buildings, in HRK (author's work)

Based upon the suggestions of engineering experts – associates within the Project (see footnote 1), it is reasonable to assume that the building restorations included energy efficiency improvements. The challenge of this paper is to estimate average reduction in electricity bills in years after restoration. In order to do this a set with completely comparable data had to be obtained, and the sample was further reduced by including only buildings with data for the entire year (12 months) within 2007-2016 period which had renovation in the year 2010, 2011, 2012 or 2013.

This ensured that there is enough yearly billing data for periods of both before and after restoration for comparison to be performed. Finally, the definitive sample obtained by the procedure explained above contained 60 buildings with yearly electricity cost data (Table 2). The variable "year of restoration" was then encoded to a dummy where 0 indicates the year prior to restoration and 1 for the year after it. The year of the restoration is unused. The panel is unbalanced, as we do not have the same number of time periods for each building, and buildings are not renovated simultaneously.

Table 2. Summary statistics for the sample of 60 buildings (author's calculations)

	Yearly electricity bills
No. of observations	487
Mean (HRK)	100,748.74
Median (HRK)	79,089.14
Maximum (HRK)	401,944.95
Minimum (HRK)	10,108.26
Std. Dev. (HRK)	78,738.00
Jarque-Bera, p	0.00
Sum (HRK)	49,064,635.47

Given different possible specifications of panel data pooled OLS vs. fixed effects, pooled OLS vs. random effects and fixed effects vs. random effects were confronted in order to estimate optimal model. Results of pooled OLS specification given by equation:

$$y_{it} = \beta_0 + \beta_1 x_{it} + \epsilon_{it} ,$$

where $i = 1, 2,…60$, $t = 1, 2, …10$ (2007-2016), are presented in Table 3. F-test with $p = 0.97$ showed that within pooled OLS specification we cannot reject hypothesis that the coefficients are jointly equal to zero.

Table 3. Pooled OLS results (author's calculcations)

	Coeff.	Stand. error	t-stat.	p-value
Intercept	99,771.74	5,696.11	17.52	0.0000
Restoration	-326.09	7,581.24	-0.04	0.97
R^2	0.000	Stand. error of regression		78,308.60
Adjusted R^2	-0.002	F-stat.		0.001
		p (F-stat.)		0.97

Fixed effects model specification is given by equation:

$$y_{it} = (\beta_0 + u_i + u_t) + \beta_1 x_{it} + \epsilon_{it} ,$$

where $i = 1, 2,…60$, $t = 1, 2, …10$ (2007-2016), u_i are building fixed effects, and u_t are period fixed effects. Since F test < 0.05 it is clear that the coefficients in the model are different than zero.

Table 4. Cross-section and period fixed effects model results (author's calculations)

	Coeff.	Stand. error	t-stat.	p-value
Intercept	106,937.60	2,959.49	36.13	0.000
Restoration	-13,019.89	4,800.91	-2.71	0.01
R^2	0.949	Stand. error of regression		19,275.12
Adjusted R^2	0.939	p (F-stat.)		0.000
Cross-section fixed (dummy variables), period fixed (dummy variables), White diagonal standard errors & covariance (d.f. corrected)				

F-test that the fixed effects are jointly equal to zero was rejected with p > F = 0.0000. Cross-section and period[2] fixed effects model specification is more appropriate than pooled OLS. After testing for redundancy of both cross-section and period fixed effects (Table 5) we rejected again the null hypothesis that the fixed effects are jointly equal to zero.

Table 5. Redundant Fixed Effects Tests (author's calculcations)

Test cross-section and period fixed effects			
Effects Test	Statistic	d.f.	p
Cross-section F	110.77	(59,36)	0.000
Cross-section χ^2	1276.85	59	0.000
Period F	10.00	(9,36)	0.000
Period χ^2	95.90	9	0.000
Cross-Section/Period F	99.50	(68,36)	0.000
Cross-Section/Period χ^2	1291.13	68	0.000

Random effects can be presented by equation:

$$y_{it} = \beta_0 + \beta_1 x_{it} + (u_i + \epsilon_{it}),$$

where $i = 1, 2,…60$, $t = 1, 2, …10$ (2007-2016), and u_i are building random effects.

Table 6. Cross-section random effects model results (author's calculations)

	Coeff.	Stand. error	t-stat.	p-value	
Intercept	98,496.87	9,931.617	9.917506	0.0000	
Restoration	6,930.28	2,198.256	3.152627	0.0017	
				Stand. deviation	ρ
Cross-section random				75,843.22	0.93
Idiosyncratic random				21,265.55	0.07
R^2	0.022	Stand. error of regression		21,338.14	
Adjusted R^2	0.020	F-stat.		9.87	
		p (F-stat.)		0.002	

The random effects model vs. pooled OLS is tested via Breusch and Pagan Lagrangian multiplier test. With the result of p > χ^2 = 0.000 we reject the null hypothesis that the pooled OLS is superior than random effects model, and we categorically reject the pooled OLS model.

---

[2] Period fixed effects (without cross-section fixed effects) model specification was rejected with p (F-stat) = 0.17 and siginificant redundancy effects test.

In order to decide between random and fixed effects Hausman (1978) test was taken. With the result of Hausman test is $p > \chi^2 = 0.94$ we are indecisive. However, the Hausman test has a number of shortcomings (Depken, 2017): it is only valid if the random effects estimator is fully efficient, it relies on asymptotics, it relies on IID error terms, it cannot be used with clustered or robust standard errors, and it cannot include time-invariant variables. Having this in mind we leaned towards the fixed effects model because we expect the results to hold only for the sample at hand (it is unlikely that the findings can be induced to the population because of the differences in the building characteristics), the fixed effects are correlated with the independent variable (electricity costs are correlated with the restoration), and the intercept is not randomly distributed across sections. Furthermore, R^2 of 0,94 and negative independent variable coefficient guide us towards fixed effects model specification.
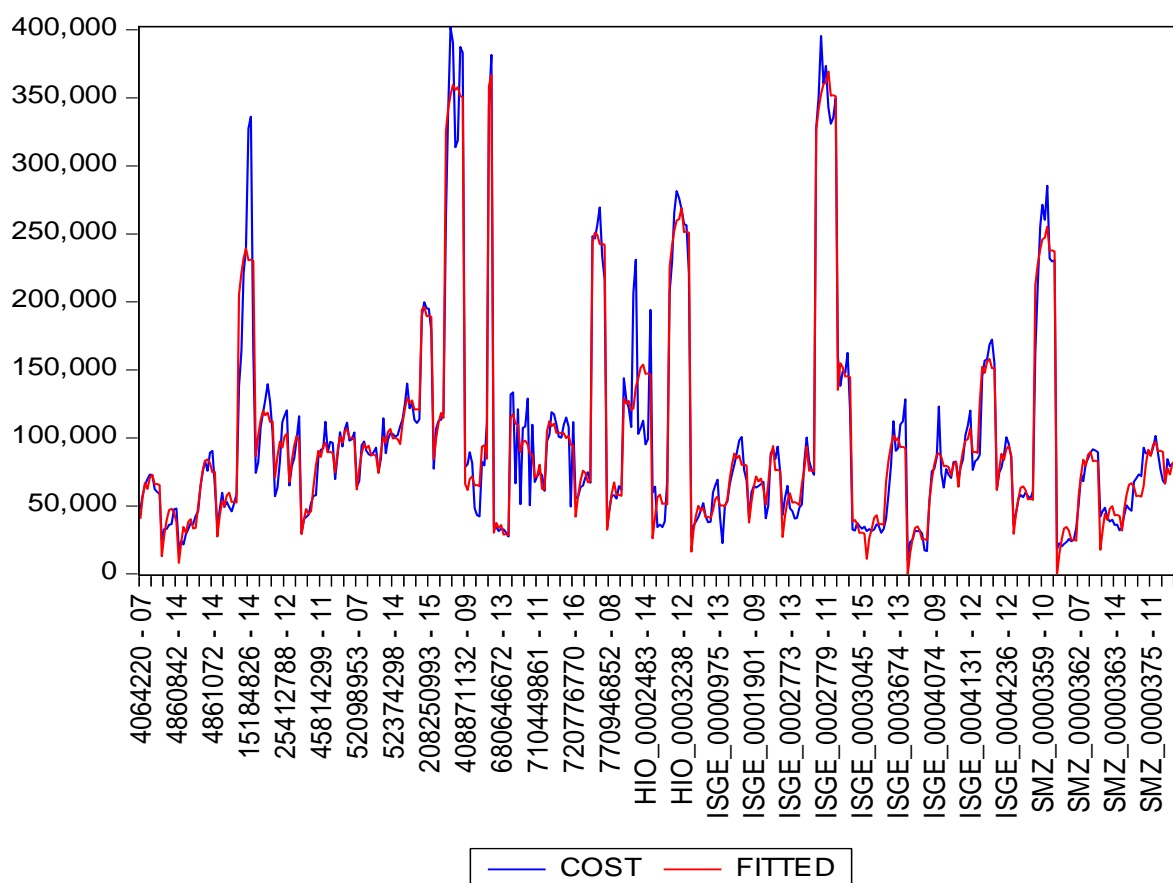

Figure 3. Actual and estimated electricity costs (author's work)

4. CONCLUSION

This study is a segment of an ongoing Project which aims at (among other objectives) assessing financial compensation and long-term financial effects of specific measures of increasing energy efficiency. A new dataset was collected which contains statistics on energy consumption and various construction characteristics of public buildings in Croatia. The purpose of this paper was to develop an initial insight into the data and to obtain preliminary estimates of energy savings after building restoration and implementation of energy-efficiency measures. Albeit starting with an initial sample of 495 buildings with 49,744 observations (monthly electricity bills), after excluding incomplete and incorrect data and aggregating them the final, workable sample consisted of 60 buildings with 487 observations (yearly electricity bills). Different specifications of panel data methodology were tested, and cross-section and period fixed effects were found to be optimal.

We found average constant yearly electricity consumption of cca 107,000 HRK (€14,300) with average savings of cca 13,000 HRK per year (€1,700) in years after restoration. In the future research dataset could be additionally purged by using advanced techniques of clustering and outlier exclusion, and expanded with new and more precise data. The obtained results could be used in policy making and calculations of financial incentives within upcoming programmes of energy efficiency improvements.

LITERATURE:
1. APN. (2018). Informacijski sustav za gospodarenje energijom (ISGE). Retrieved from http://apn.hr/gospodarenje-energijom-isge/informacijski-sustav-za-gospodarenje-energijom
2. Baltagi, B. (2001). *Econometric Analysis of Panel Data*. John Wiley & Sons.
3. Chovancová, J., Kocourková, G., & Kozumplíková, L. (2014). Assessment of Operating Cash Flow of The Investment in A Construction of Passive Houses. *Tehnički Glasnik*, *8*(4), 339–345.
4. Depken, C. (2017, June). *Panel Data Econometrics*.
5. EC. (2016a). *Clean Energy For All Europeans*. European Commission. Retrieved from http://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52016DC0860&rid=2
6. EC. (2016b). *Clean Energy For All Europeans - Annex I.* European Commission. Retrieved from https://ec.europa.eu/transparency/regdoc/rep/1/2016/EN/COM-2016-860-F1-EN-ANNEX-1-PART-1.PDF
7. Hausman, J. A. (1978). Specification Tests in Econometrics. *Econometrica: Journal of the Econometric Society*, *46*(6), 1251–1271. https://doi.org/10.2307/1913827
8. Hrs Borković, Ž. (2009). Energy Certification Of Buildings And Modern Energy Concepts. *Energija*, *58*(4). Retrieved from https://hrcak.srce.hr/index.php?show=clanak&id_clanak_jezik=65749
9. Kennedy, P. (2008). *A Guide to Econometrics* (6th ed.). Blackwell Publishing.
10. Pavković, B., Zanke, V., & Čačić, G. (2010). Energy efficiency in building sector in Croatia-Preliminary Energy Studies. *Strojarstvo: Časopis Za Teoriju i Praksu u Strojarstvu*, *52*(6), 681–694.
11. Sajter, D. (2017). Methods of Evaluating the Long-Term Financial Effects of Energy Efficiency Projects. *Business and Economic Horizons*, *13*(3), 295–311. https://doi.org/10.15208/beh.2017.22
12. SRCE - University of Zagreb, University Computing Centre. (2018). Hrčak. Retrieved March 16, 2018, from https://hrcak.srce.hr/
13. Zekić-Sušac, M. (2017). Machine Learning In Energy Consumption Management. In S. D. Lidija Zadnik Stirn Mirjana Kljajić Borštnar, Janez Žerovnik (Ed.), *Proceedings of the 14th International Symposium on Operational Research in Slovenia, Bled, September 27 - 29, 2017.* (Vol. 14, pp. 7–17). Slovenian Society Informatika – Section for Operational Research.

STRATEGIES FOR THE DEVELOPMENT OF NEW PRODUCTS OF FAMILY BUSINESS

Maja Borovina Frankic
University of Split, Faculty of economics, 21000 Split, Matice hrvatske 31, Croatia
maja.borovina@gmail.com

Zelimir Dulcic
University of Split, Faculty of economics, 21000 Split,
Matice hrvatske 31, Croatia
zdulcic@efst.hr

Ivan Peronja
University of Split, Faculty of maritime studies,
Department of maritime technology management, 21000 Split, Ruđera Boškovića 37, Croatia
iperonja@pfst.hr

ABSTRACT
The term - development of new products is used to describe the process by which a company launches a new product or service to the market. Innovation would be the process of creating creative ideas and transforming them into a useful product, service or method of work. According to many authors, the most important input in creating innovation is knowledge. The development of new products is a risky business move and is often considered as one of the most important business events in the company. For this reason, companies entering the development process have certain expectations of that product in the future in terms of: taking new market shares, becoming innovative and ultimately increasing profits. The term of new product, in this research, we mean: new products, improvements of existing products, product modification, and brand new product development for the market. When introducing a new product to the market, both companies and family can use one of several business strategies: strategy of slow penetration, strategy of fast penetration, fast-picking strategy, and slow-picking strategy. Innovation and innovation strategies and the concept of innovative family businesses will be also discussed in research. The research will be based on the data collected from the ten most successful family businesses through a survey questionnaire. Then, through the method of analysis and synthesis we will come to the conclusion what is the most common strategy for developing a new product that is used by successful family businesses and which is suitable for each type of product. It will be clarified the factors for creating the image of an innovation company and the importance of innovation for the further survival of the enterprise.
Keywords: *family business, new product, innovation, development of new product, development strategy of new product*

1. DEVELOPMENT OF NEW PRODUCTS

The term development of new business products is used to describe the process by which a company launches a new product or service to the market. For the ultimate success of a product (its product policy), it is important that it develops along with its technical development and marketing (research and analysis) that accompanies this product. (Šerić, 2009.) Product development can take place in two basic forms: the company can implement its own development of a new product by acting its own research and development department, or the enterprise can outsource through contracts, research institutes, agencies. With the term NEW PRODUCT we mean new products, product improvements, product modification, and brand new products that a company develops for a particular market.

Out of 100 ideas for product development only 3 to 10% succeeds in the market, 2/3 new products experience failure in the first two years. (Šerić, 2009.) One company can come up with new products in many ways. This way largely depends on the degree of development of the state and the economy that ultimately result in the financial resources available to enterprises to acquire new products. There are several ways to acquire new products:
- by buying a company, and hencing the product of that company
- buying patents
- by buying a license or a franchise
- developing new products

The most valuable route is certainly the development of new products, but this is not the way for all companies because they cannot afford it, because with such a way of acquiring new products, there is a huge necessity for financial resources. Financial stability is a prerequisite for such development because the development of quality new products can last for a longer period and the period when the product returns the funds invested is greater than these other alternatives. To achieve success in product research and development, it is important to develop, along with its technical development, marketing and research and analysis that accompany this product or service. Product research and development is implemented primarily through R&D activities. New designs and similar news are often crucial factors for survival of the company. In a rapidly changing industry, companies need to continually change their design and range of products. The need therefore arises because of the continuous change of technology and development, as well as in competitive companies, and the changing customer preferences. Product research and development is very important for businesses, because, for example, they do not invest in this segment, they have to rely on strategic alliances, acquisitions, and networks to be able to take advantage of the innovations of others. (Šerić, 2009.) Research and product development goes hand in hand with managed marketing activities and market research. You need to get accurate information about the needs of customers and about the products that are on the market demanded and for which we know that they will be sold. Successful product development research starts with ideas and simultaneous understanding of existing and potential buyers. Today, product research and development is a cornerstone of modern business world. The most important company decisions are based on research and development results. (Šerić, 2009.) Research and product development also has great importance in business as well as level of competition among companies. Namely, production processes and new methods are rapidly increasing. It is important to keep up with the changes and competitions of the competition, so it is necessary to keep track of the needs of the clients as it is only possible to follow the modern trends and demands of the larger market. Most people associate research and product development with the invention of new products, but it should be stressed that the development of existing products is very important as consumer preferences are constantly changing. For this reason, we can say that research and product development activities result in satisfying customer needs in the future. Some examples of good practice are Nestle and Henkel. (From: http://www.pravaideja.net/istrazivanje-i-razvoj-proizvoda/) Product research and development is a key competitive advantage by which Nestlé has become the world leader in the food, health and healthy life of the food industry. The company has a total of 29 locations for research, development and technology worldwide and employs over 5,000 people. Nestlé has the largest network of research and development centers in comparison to other food companies. Nestlé continues to strengthen its network of R & D centers through innovative partnerships at every stage of product development - from the early stage of co-operation with newly-established and biotechnology companies, to a later partnership with key suppliers. Nestlé provides high quality and safe products to consumers around the world, whether it is nutrition, health, healthy life, taste or texture. In addition, Nestlé offers its consumers top-

quality products. The research and development of the product since the founding of Henkel in 1876 and so far goes through the whole history, which is characterized by a series of unique innovations and new products. Intensive and detailed research has consistently achieved success in recognizing the wishes and demands of their customers, meeting them with creative ideas and extraordinary innovations. The key to success is that all Henkel's employees are committed to cooperate to maximize their innovation potential and develop new markets by exploiting their creative abilities. Henkel encourages each associate to exhibit innovative ideas and to develop awareness of the great importance of renewal. The company combines analytical observation of trends with direct and strong customer contact and leverages acquired knowledge to further develop creative concepts and innovations in their business sectors. The primary responsibility of the department for professional research and development around the world is to transform new ideas into products that will be sold. So we can say that product research and development is tracked by about 2,700 Henkel employees. Dell Inc. and Starbucks, on the other hand, show that innovation does not follow investment in research and development. So is Dell Inc. one of the world's largest computer manufacturers not through investment in R & D, but through bringing products to the market through faster and more innovative manufacturing processes. The Starbucks company, however, is not based on the creation of better-flavored coffee, but rather on creating a unique consumer experience in terms of perceiving its product as a synonyms for business and home-based meetings. In order for a product to respond to customers, it is necessary to have some features tailored to the needs of customers, and in order to best meet customer needs and wishes, the market must be explored. In addition, it is necessary to harmonize the technological processes, costs and wishes of the customers so that the product is still a product that is easy to sell. The whole process around the product needs to be well planned because it is a long lasting process that begins when the idea of a new product comes about and lasts as long as the product is present on the market and only ends when the product is withdrawn from the sale. However, not every product has the same lifetime, because its existence depends on a number of factors.

1.1. Strategies of introducing products to the market

The developer first develops the idea of a new product, then invests in a product with the intent to market it, decides to place it on the market in order to meet customer needs and care about whether the sale will ultimately be successful. The producer introduces the product to the market, but the product does not produce any gain at this stage because of the previous production costs and product placement costs on the market, but with a good distribution organization, good propaganda and other promotion methods to boost placements, the sale is gradually accelerating. (Klepić, 2013.) When introducing products to the market, four strategies can be distinguished on the market, namely:

- A fastest future strategy: launching a new high-priced product with high level of promotion. There is a sense if it is a big potential market that is unfamiliar with the product and they want to own it, and can pay that price; the company faces the competition and wants to build a preference for its brand.
- strategy of embezzlement: launching a new product at high prices and with a low level of promotion. It makes sense if there are the following determinants: a limited market, consumers are willing to pay the price and do not threaten competition.
- High spreading strategy: launching a new product at low prices and with a high level of promotion. There is a sense if the market is large, it is unfamiliar with the product, and it should be taken into account that most consumers are price-sensitive, there is strong competition, production costs fall as the company increases production and gains production experience.

377

- Draft signature strategy: launching a new product at low prices and low level of promotion. It makes sense if: the market is large, consciously products, prone to price and there is competition.

Developing and introducing new products is often risky and costs. The reasons for the failure of new products may be poor product design, poor market positioning, perhaps too high prices, bad advertising, or bad advertising. The product can succeed on the market if it offers buyers better quality and some of their features that do not stand out with their competitors if it is a good appraisal of the target market and if it targets less market segments. There are many changes in the market, the market becomes saturated, consumer needs are changing, technological advances etc. and therefore manufacturers need to always investigate the market and follow various changes and act in accordance with the changes as only so can the new product on the market succeed . If not investigated and not responding in time, the competition will soon find itself in a better position and take over part of the market and profit. According to the European Barometer of Family Businesses (2016.), Croatia's family businesses are closer to the goals of European companies where, with profitability and revenue, the recognition of the need for innovation and the design of new products is also highlighted by turning to the local market.In the question of identifying future goals, 57% of European and 64% surveyed countries are improving profitability and 34% of European and 42% of Croatia's higher income as their primary business objective. The order corresponds to the natural aspirations of family business owners to increase sales and maintain revenue growth above the cost increase to enable further business development. Major changes compared to last year were in other priorities, especially comparing Croatian results while earlier strategies were almost equally divided around global expansion, innovation and diversification, innovation has now taken over leadership, followed by internationalization and seeking talented employees. Innovation is a precondition for competition in today's global economy and key to enterprise success. Therefore, it is not surprising that more than half of the respondents, who are planning to invest in the coming years, have invested in innovations among the most promising areas of investment and the main business priorities.

2. INOVATION

In the continuation of the research work, there will be more words about innovations as a prerequisite for the success of family ventures. Innovation is considered a process of creating creative ideas that transform ideas into a useful product, service or method of work (Boddy, D., 2008). The goal is always to create additional value for every business and family. There are several types of innovation. Product innovation refers to the introduction of new or improved products on the market that are new to the enterprise, but not necessarily for the market. (Kružić, 2016.) Innovation of the process refers to the applied or improved production process. Organizational innovation is a new organizational method in a business practice of a company, and may relate to a new or improved job organization or the development of new relationships with other business entities with which the enterprise cooperates. (Kružić, 2016.) Marketing Innovation refers to the application of a new marketing concept or strategy that has not been used within the company so far. In addition to numerous innovation divisions, it is important to mention the classification of innovations that for the criterion takes the very nature of innovation and thus differ: (Kružić, 2016.)

1. Incremental (evolutionary innovations) with the following characteristics: gradual and constant change, collective employee involvement, characterized by slow-moving activity requires a lot of research but a lot of effort to maintain improvements,

2. Radical (core) innovations are characterized by large and sudden changes, the use of know-how by a few experts (without involvement of all), large-scale research, characterized by a fast-paced economy.

The conclusion is that when it comes to innovations, it is not just new products, but innovations, considering it in the context of the competitive advantage of a family business. A family business risked being behind the competition if it is not capable of innovating, successfully managing changes and accepting changes. (Kružić, 2016.) There are three basic models of innovation in family businesses. The first is a Linear model of innovation that implies that innovation begins with the fundamental idea of the advancement of certain technology, which is subsequently implemented in products and offers the market. The model starts with basic research then applies research and develops innovation itself through the production process. At the end, there is only a push product effect on the market where the key issue is the diffusion or acceptance of such innovation on the market. (Kružić, 2016.) The second innovation model places the market in its core and is called a chain of innovation. It is based on the needs of a potential spin. The market needs first and then approaches the development and testing of the concept. The following is followed by the production of an innovated product and its commercialization on the market. The model is based on the demand pull approach to innovations where it starts from the needs of the buffers and the product in all stages of development adjusts to the target market. (Kružić, 2016.) The innovation strategy model is the third model of innovation development in which the company's strategy is considered. This model does not rely on market needs or investment in R & D, but on the attitude that an enterprise can influence the environment by choosing proper strategic directions of action and taking on an active role in the market. Enterprises that we think are innovative in recent times mostly use the innovation leader strategy and the so-called strategy pull method of innovation where the first phase is setting a proper strategy for I&R investment, production, and then marketing activity to the ultimate goal-meeting market needs. (Kružić, 2016.) Every innovation as every family company has its own life cycle. These are: (Kružić, 2016.)
1. Invention - the process of creating a new idea for the purpose of growing a family business
2. Development - a process of innovation that involves making the idea practical.
3. Diffusion - an innovation process in which the end-users idea is applied in practice.
4. Integration - the phase in which the product is an integral part of the family business offer and is only improving and improving.
5. Decline is the phase that follows when the use of innovation stops.

According to Bowonder and co-workers and their research (2010.), 12 innovation strategies are best described for the purpose of creating competitive advantage:
1. Platform Offering Strategy: Through a common platform, the enterprise meets a variety of needs to deliver solutions to different segments (for example, Google, which consists of Gmail, browser, search engine, Google Image, and Google Talk).
2. The Strategy of Joint Creation; work with the client and use its perspective to create a new perspective for the company (for example Boeing-777 developed in cooperation with flight users).
3. Time Cycle Reduction Strategy: Faster Sale to the Market so that Clients can get their product earlier (for example, Toyota Prius, which has reduced the cycle time for a year)
4. Branding Value Growth Strategy: The company delivers new elements to break the client's aspirations (for example, Unilever has added a protein derived from Arctic fish and plants to ice cream and frozen food) with ice cream and frozen desserts.

5. Technology Impact Strategy: The company uses advanced technology to be better than competition (for example, Tetrapak used nanotechnology in its cosmetic products to develop a high penetration rate of emulsion into the skin).

6. Future Proofing Strategy: Creating many options to reduce business insecurity (for example, Toyota has chosen more options - diesel, hybrid, electric, fueled cars and bio fuel engines).

7. Savings-based strategy: reducing waste and cost of production (for example, Toyota as the first company to use savings-based development).

8. Partnership strategy: Use partnership to be more responsive to competitive pressure (for example, EADS is an entity that consists of Airbus Industries, Deutche Airbus, CASA and British Aerospace Limited).

9. Innovation Mutations Strategy: Creating a New Product through Mutated Technology (Examples include Ipod and Iphone).

10. Creative Destruction Strategy: Purposeful Destruction of an Existing Bid and Replacement with the New Product (Example: Microsoft Released the Operating System Vista while Microsoft Windows Marketplace Marketed Very Well).

11. Market segmentation strategy: Creating a new market segment or creating a new space of opportunities and opportunities (for example, IKEA, which has become a global company in the furniture industry using the market segmentation strategy).

12. Acquisition strategy: adoption of technology, brand, or market (for example, Unilever, which has adopted so-called slim fast technology to create new nutrition with slimming potential).

The twelve Innovation strategies that fully illustrate all possible options of the innovation process represent an essential backbone that a family business can plan and shape its future. All family businesses can be permanent or periodically focused on innovation processes but the key is to innovate in the full sense of the word extends throughout the entire business of the company, either permanently or occasionally. From all of the above, it is concluded that in modern market conditions, innovation is a necessary prerequisite for a sustainable growth of enterprises and the retention of the company's competitive advantage, irrelevant in what form it has emerged: as a product, as a process or through the organization of existing processes. (Kružić,2016.) One of the key issues related to innovation and innovation success is the tendency of family businesses to accept innovations. The problem of opposing forces in the company - for and against change - is formed through the company's tendency to innovation, called OPI (Organization Propensity to Innovate). The higher OPI level means the greater innovation of the company, while the opposite, the lower level of OPI is characterized by those companies with low innovativeness. The growth of family business is affected by various internal and external factors. Some of the external factors are: stagnation or decline in market needs, excessive competition, the existence of legal constraints, underdeveloped traffic and trade, the discouraging measures of the economic policy of the country where the company operates. Some of the internal factors of growth are: lack of a family investment initiative, fear of taking risks, family finances, lack of experience and experience, and improper leadership of the company. In addition to the stated organizational structure of an innovative family enterprise, it has certain characteristics as opposed to traditional unmistakable changes. Such an organizational structure of an innovative family enterprise is characterized by a decentralized structure, lesser specialization of work, and the existence of lesser amounts of rules. (Kružić, 2016.) These are the conditions for creating an atmosphere of creativity within an innovative family business. Accordingly, companies that emphasize rules and procedures and where there is a centralized division of labor lose the sense of innovation because in such a business environment, livelihoods are lost.

According to recent research, it is noted that the concept of corporate entrepreneurship is increasingly being used to develop an entrepreneurial spirit in order to produce as much innovation as possible and to release the shortening envelope to all employees in the enterprise. Through the research of domestic entrepreneurship literature, certain characteristics of family enterprises that are significant for the innovation process can be distinguished: (Kružić, 2016.)

- long-term with a clear goal and vision of development,
- a high degree of trust among employees,
- Reinvestment of profits in innovation activities,
- investing own capital into innovation,
- reliance on external sources of knowledge during innovation development.

From all of the above, it is concluded that the traditional approach to family business operations is no longer efficient. The success of most family businesses depends on the creativity of entrepreneurs and business leaders, the creativity of employees and the innovation of the organization as a whole. To create a creative environment within a family business there are different models of the innovation strategy. The company only chooses the most cost-effective tracking of intense market trends. With creativity, the key to the development of a new product within a company, ie innovation itself, is knowledge from different sectors. Business days are facing complex market challenges and the company's competitiveness is increasing. By strengthening innovation potentials and creating culture of innovation within a family enterprise, it is the foundation for the success of the enterprise itself.

3. RESULTS OF EMPIRICAL RESEARCH

A questionnaire on the development of new products in 13 Croatian family businesses will be processed in next. At the very end, the conclusion will come - what makes the Croatian family company innovative and successful? Below are the questions asked and the corresponding answers and charts.

1. In the company you represent this way, are you?

Answer Choices	Responses	
FOUNDER	0,00%	0
OWNER	38,46%	5
ONE OF OWNERS	0,00%	0
FOUNDER AND OWNER	38,46%	5
FOUNDER AND ONE OF OWNERS	23,08%	3
Answered		**13**
Skipped		**0**

Figure following on the next page

Chart 1
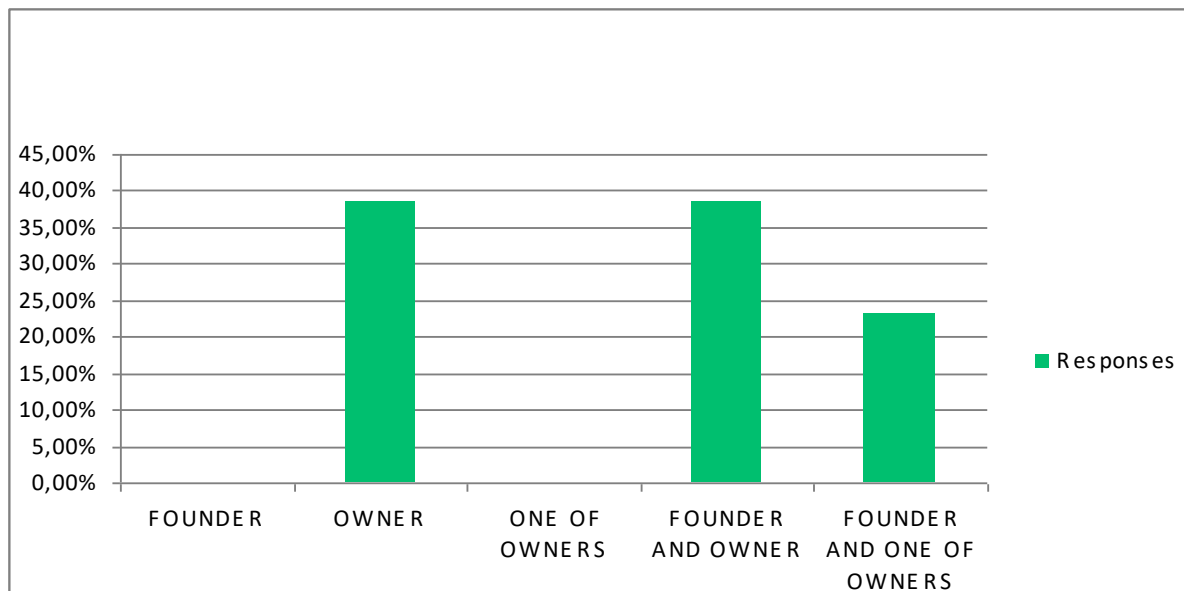
Source: Authors' research

The first question from the questionnaire answers the question of who the respondent has any function in the company. The same number of owners and owners are found, but also owners. Then they are followed by percentages of those who are founders and one of the family business owners.

2. Has your company been doing business for more than 5 years?

Answer Choices	Responses	
YES	92,31%	12
NO	7,69%	1
	Answered	**13**
	Skipped	**0**

Chart 2
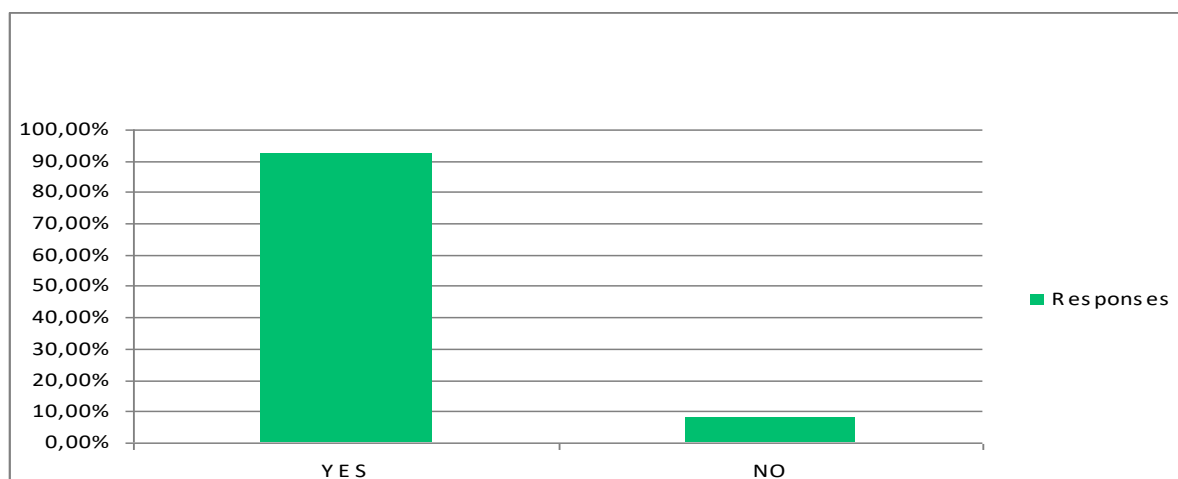
Source: Authors' research

Furthermore, it is mostly about companies that have been doing business for more than 5 years. Only one of them operates less than that period.

3. Does the company create a new product / service?

Answer Choices	Responses	
YES	69,23%	9
NO	23,08%	3
MAYBE	7,69%	1
Answered	**13**	
Skipped	**0**	

Chart 3
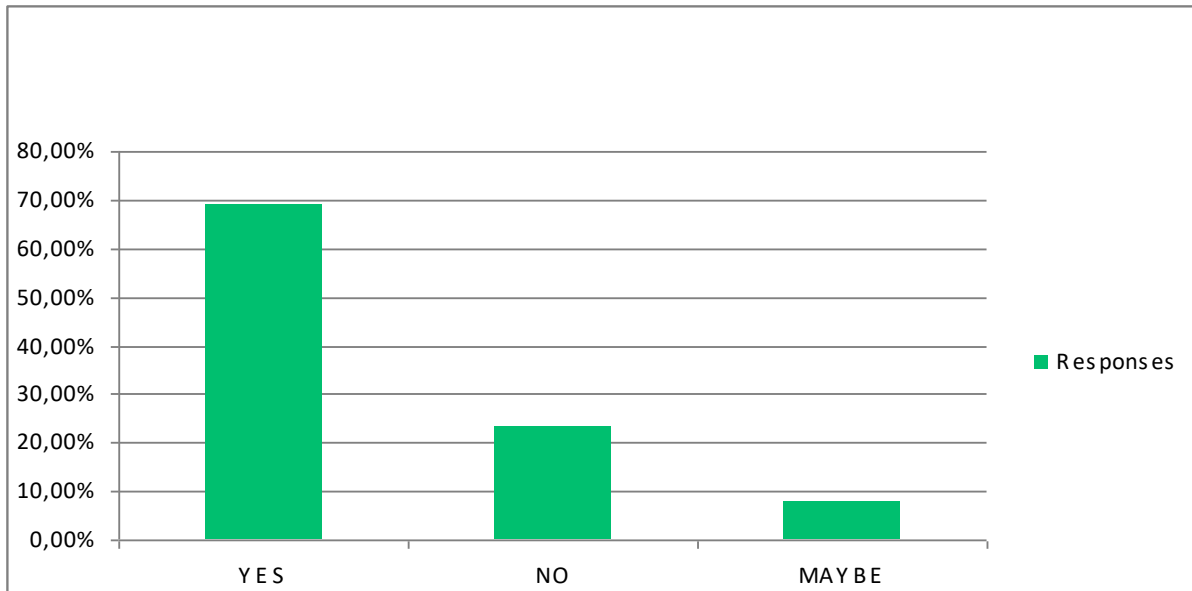
Source: Authors' research

Furthermore, the questionnaire answers the question whether the company is creating a new product and / or service. Out of 13 respondents, nine respond to them affirmatively, while others are not sure or disagree with this statement.

4. Does the company improve existing business processes?

Answer Choices	Responses	
YES	92,31%	12
NO	0,00%	0
MAYBE	7,69%	1
Answered	**13**	
Skipped	**0**	

Figure following on the next page

Chart 4
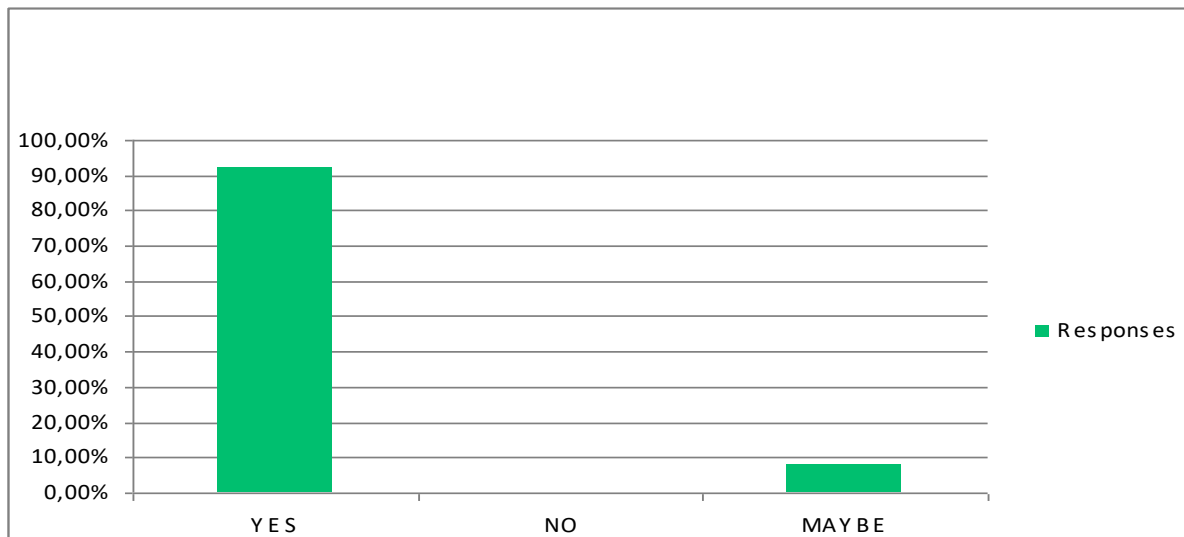
Source: Authors' research

We then find out that out of 13 respondents, as many as 12 of them believe that their company improves existing business processes.

5. How often do you use term INNOVATION in your business?

Answer Choices	Responses	
NEVER	7,69%	1
RARELY	23,08%	3
OFTEN	69,23%	9
ALWAYS	0,00%	0
Answered	**13**	
Skipped	**0**	

Chart 5

Source: Authors' research

384
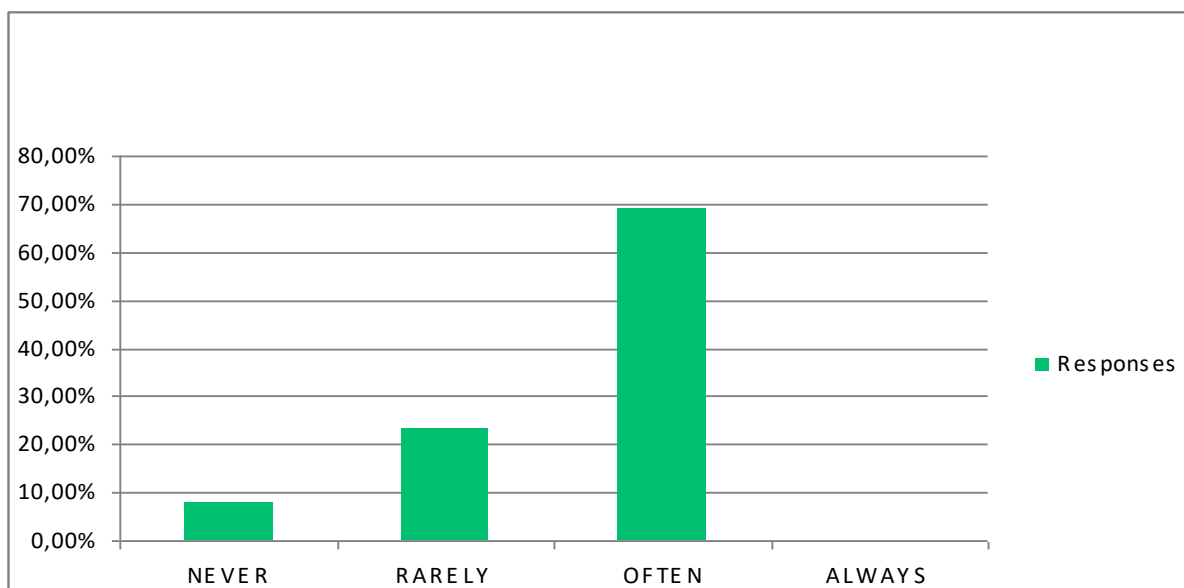
Positive responses are found in as many as 69% of respondents and the question of whether their innovations are often used in their business. Interestingly, no one is always using that expression.

6. Would you use a product / service of company if you were buyer?

Answer Choices	Responses	
YES	100,00%	13
NO	0,00%	0
MAYBE	0,00%	0
Answered		**13**
Skipped		**0**

Chart 6
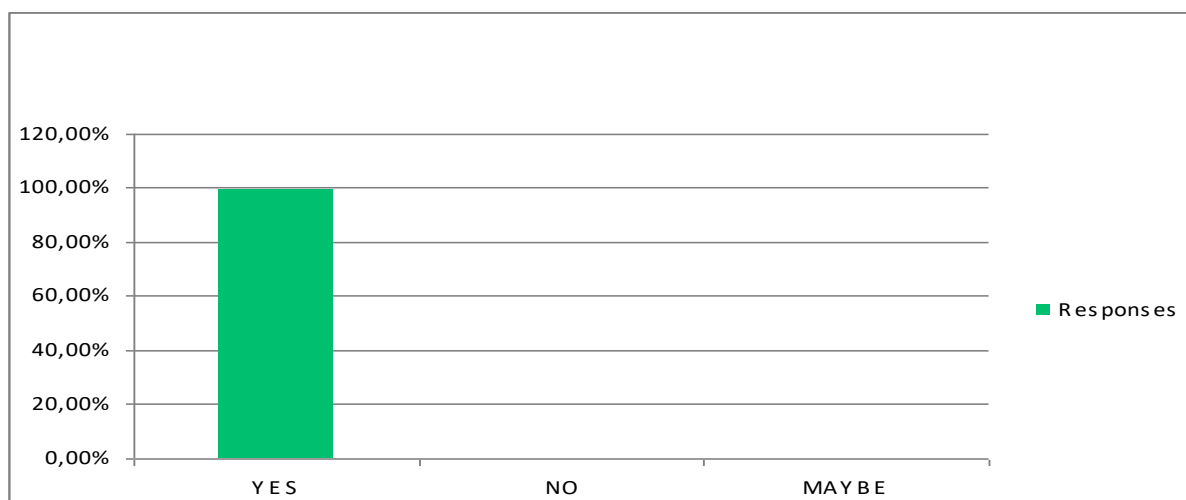
Source: Authors' research

It is also a very important fact that all 13 respondents would use the product / service of the company where they work at the customer's place.

7. How much of the company's revenue from the development of new products is in the last three years of business?

Answer Choices	Responses	
> 50.000,00 kn	15,38%	2
50-100.000,00 kn	7,69%	1
<100.000,00 kn	76,92%	10
Answered		**13**
Skipped		**0**

Figure following on the next page

Chart 7
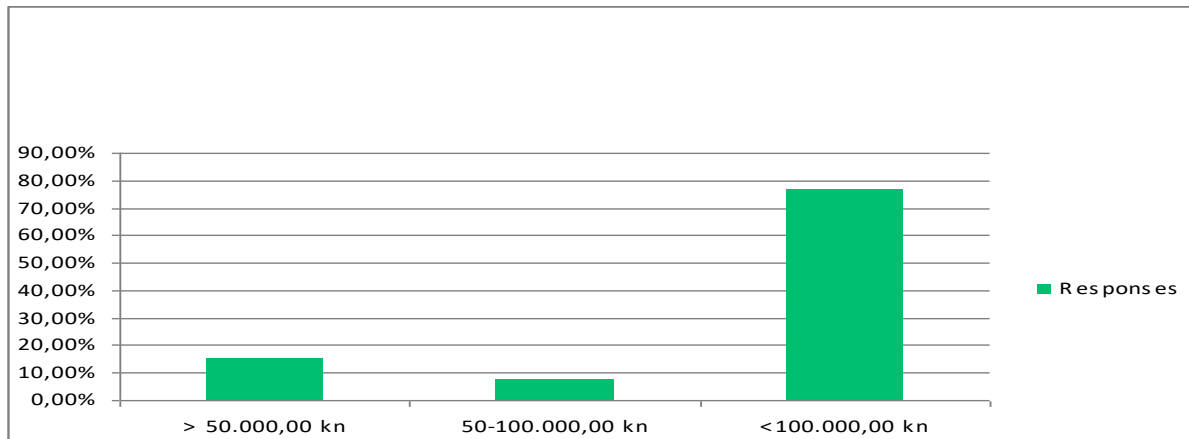
Source: Authors' research

Question 7 from the questionnaire answers the question of enterprise income from the development of new products in the last three years. Even 76% of them agree that this amount is greater than 100,000kn.

8. What is the percentage of total company revenue? (Next to the previous question)

Answer Choices	Responses	
0-10%	15,38%	2
11-20%	46,15%	6
21-30%	0,00%	0
31-40%	23,08%	3
41-50%	0,00%	0
50-75%	0,00%	0
More than 75%	15,38%	2
Answered	**13**	
Skipped	**0**	

Chart 8
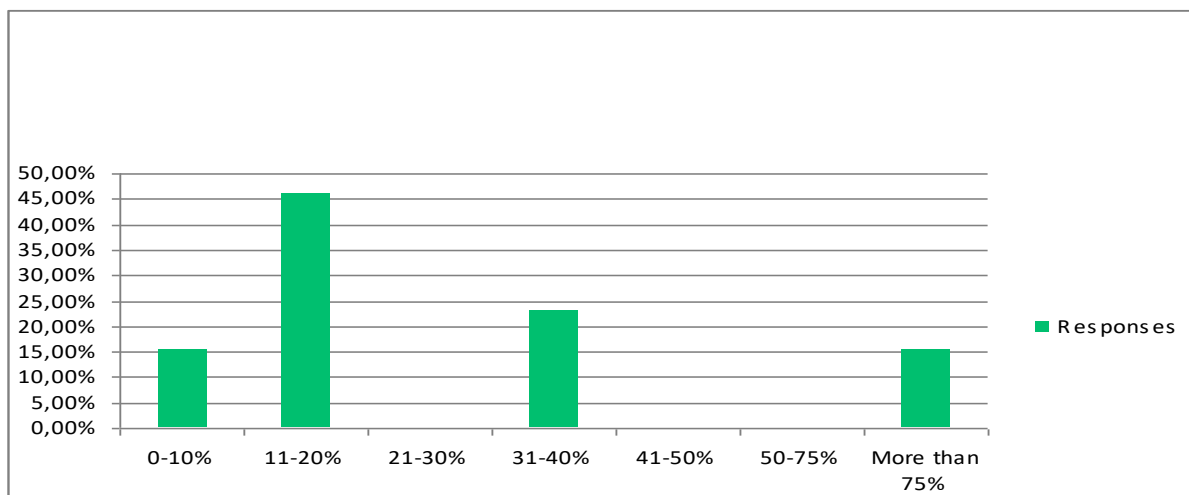
Source: Authors' research

Then we find that 46% of respondents answer that the revenue from selling new products up to 20% of total business revenue. Only for two companies has been confirmed that these revenues are up to 75%.

9. Have you ever filed intellectual property rights over the past three years?

Answer Choices	Responses	
YES, ONE OR MORE PATENTS	7,69%	1
YES, ONE OR MORE PROTECTIVE SKILLS	0,00%	0
YES, PROTECTION OF AUTHOR RIGHTS	7,69%	1
NO	84,62%	11
	Answered	**13**
	Skipped	**0**

Chart 9
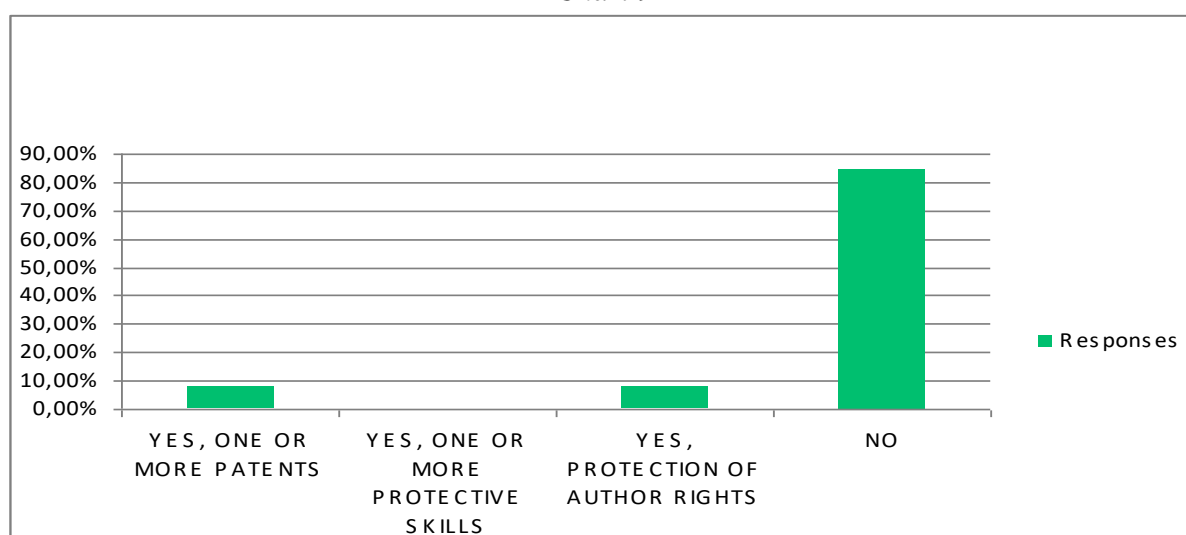
Source: Authors' research

Furthermore, the ninth issue in the questionnaire provides an answer to whether the parties concerned have filed intellectual property rights over the last three years, whether they are patents, trademarks or copyrights. Even 84% of them responded negatively.

10. Is there a business unit exclusively for research and development?

Answer Choices	Responses	
YES	0,00%	0
NO	100,00%	13
	Answered	**13**
	Skipped	**0**

Figure following on the next page

Chart 10
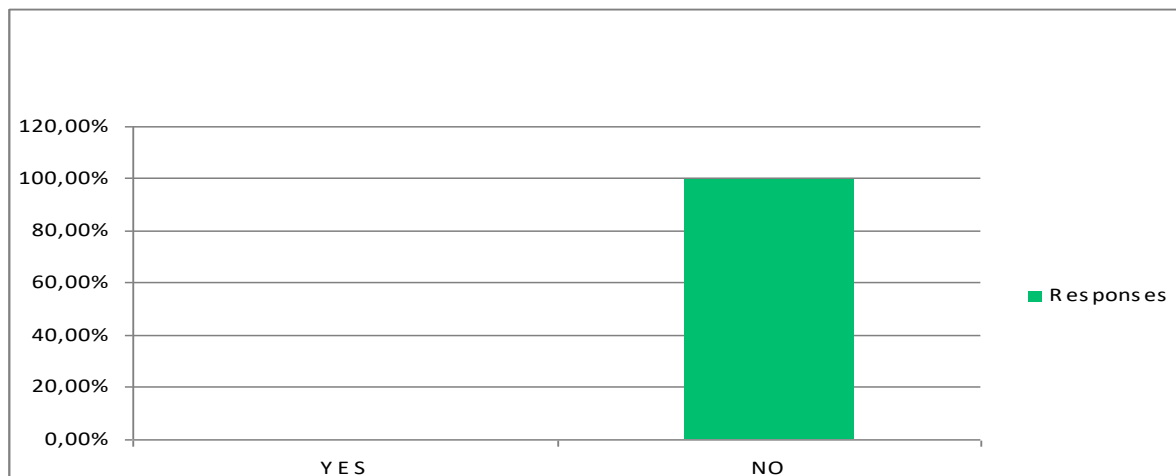
Source: Authors' research

From the tenth graph it is apparent that out of the 13 surveyed family businesses, no one has department formed to research and develop new products / services.

11. How many employees in the company are working on developing a new product / service? (If the answer to the previous question is YES)

Answer Choices	Responses	
0	33,33%	3
1-5	55,56%	5
More than 5	11,11%	1
	Answered	**9**
	Skipped	**4**

Chart 11
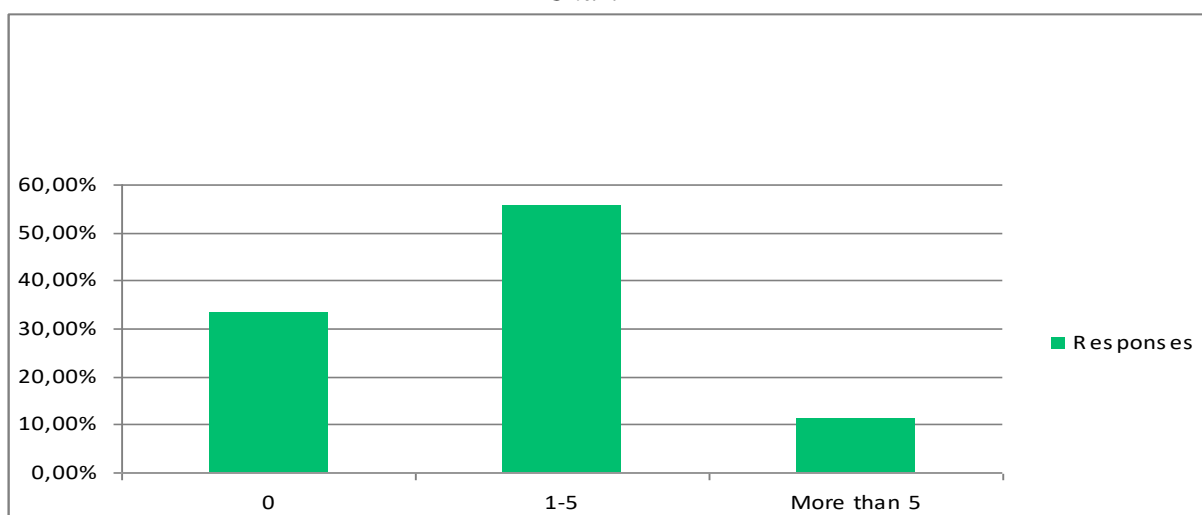
Source: Authors' research

The next question gives the answer about the number of employees working on the R & D process. They have up to five employees, but there is a large percentage of those who do not have one employee at all - 33.33%.

12. Are enterprise development projects compatible with company goals and mission?

Answer Choices	Responses	
YES	76,92%	10
NO	7,69%	1
MAYBE	15,38%	2
Answered		**13**
Skipped		**0**

Chart 12
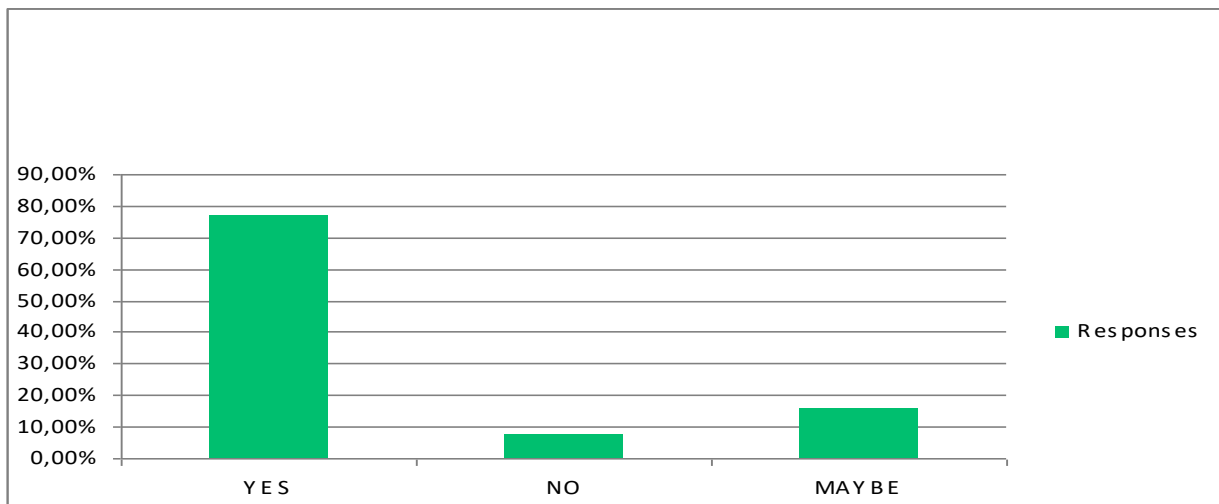
Source: Authors' research

The question 12 is whether the development projects of the company match the goals and the mission of the company, positively corresponds 10 participants.

13. Does the company have clear development goals and projects related to new products / services?

Answer Choices	Responses	
YES	53,85%	7
NO	0,00%	0
MAYBE	46,15%	6
Answered		**13**
Skipped		**0**

Figure following on the next page

Chart 13
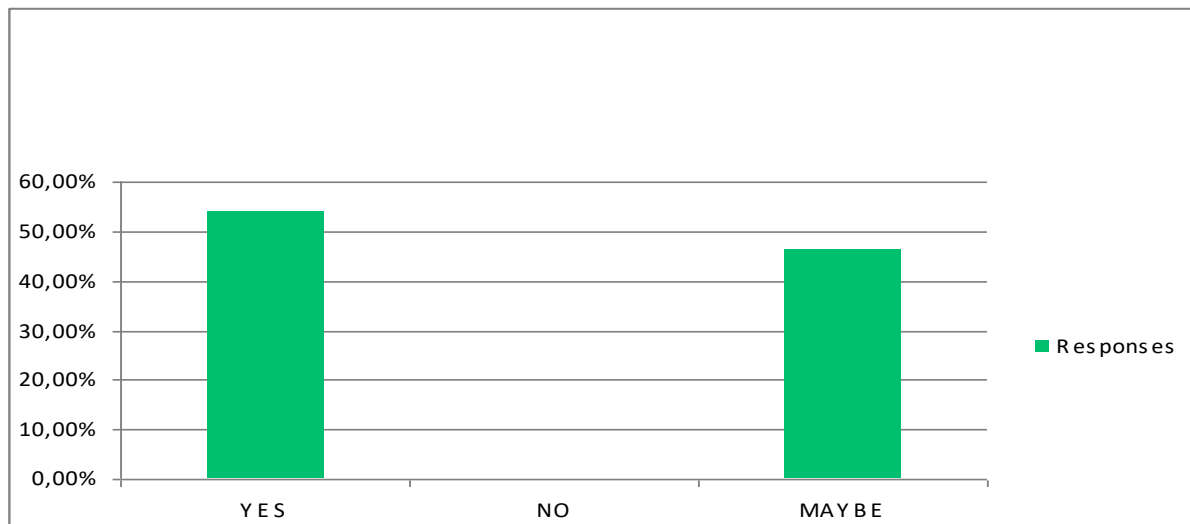
Source: Authors' research

We then find out how many respondents think their company has clear development goals and projects related to new products / services. 54% of the respondents believe there are, and as many as 46% of them are uncertain in answering that question.

14. Are the goals of developing new products / services focused on:

Answer Choices	Responses	
EXISTING BUYERS	38,46%	5
NEW BUYERS	61,54%	8
Answered	**13**	
Skipped	**0**	

Chart 14

Source: Authors' research

Further, we find that 62% of respondents believe that the goals of developing new proviews and / or services are directed at new customers, while 38% of them are confirmed for existing customers.

15. Is marketing research an integral part of the process of developing new products / services?

Answer Choices	Responses	
YES	23,08%	3
NO	30,77%	4
MAYBE	46,15%	6
Answered	**13**	
Skipped	**0**	

Chart 15
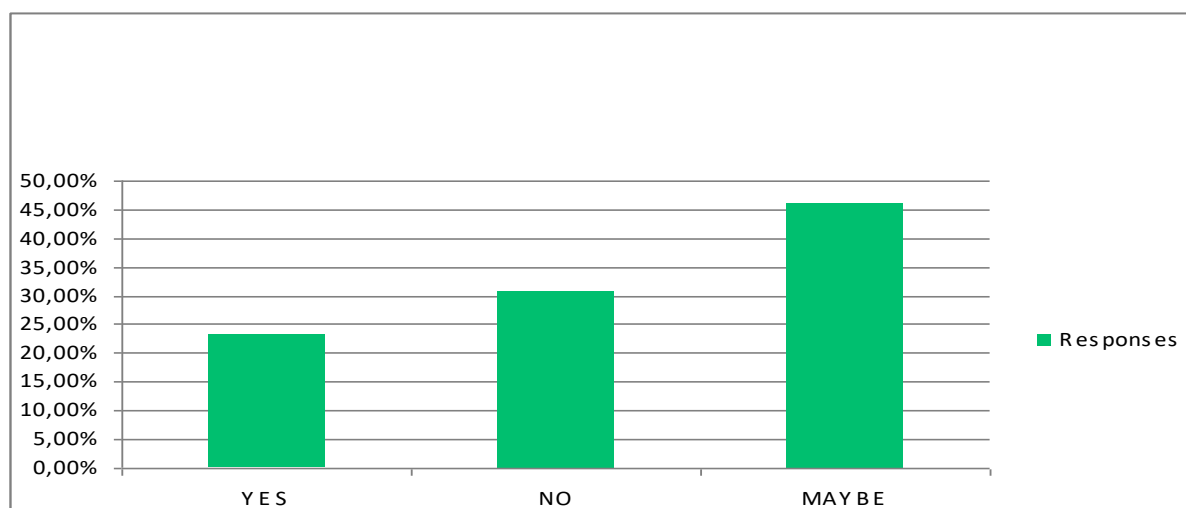
Source: Authors' research

Question 15 gives answers to whether marketing research is an integral part of the process of developing new products / services. Responses are divided - 3 respondents claim to be, 4 if not, while 6 are not safe in the stated statement.

16. Does your company investigate the market?

Answer Choices	Responses	
YES	46,15%	6
NO	30,77%	4
MAYBE	23,08%	3
Answered	**13**	
Skipped	**0**	

Figure following on the next page

Chart 16
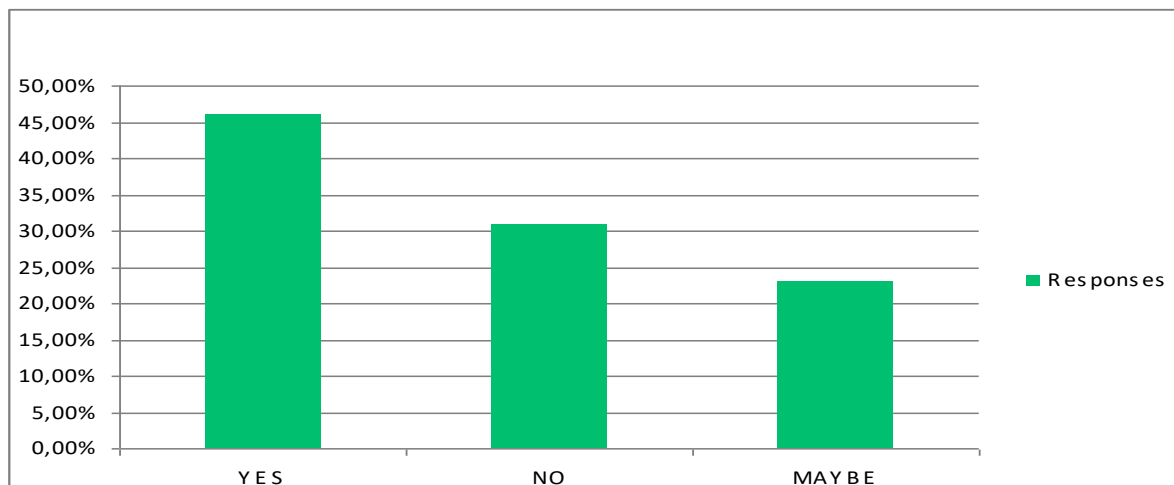
Source: Authors' research

Following the previous question, 16th ais related to whether the companies questioned the market. The opinion is divided into 6 with the answer yes, 4 with no and three are not sure of the answer.

17. If yes, how often?

Answer Choices	Responses	
WHILE IMPORTING INNOVATION	22,22%	2
BEFORE IMPORTING INNOVATION	55,56%	5
AFTER IMPORTING INNOVATION	22,22%	2
Answered		**9**
Skipped		**4**

Chart 17
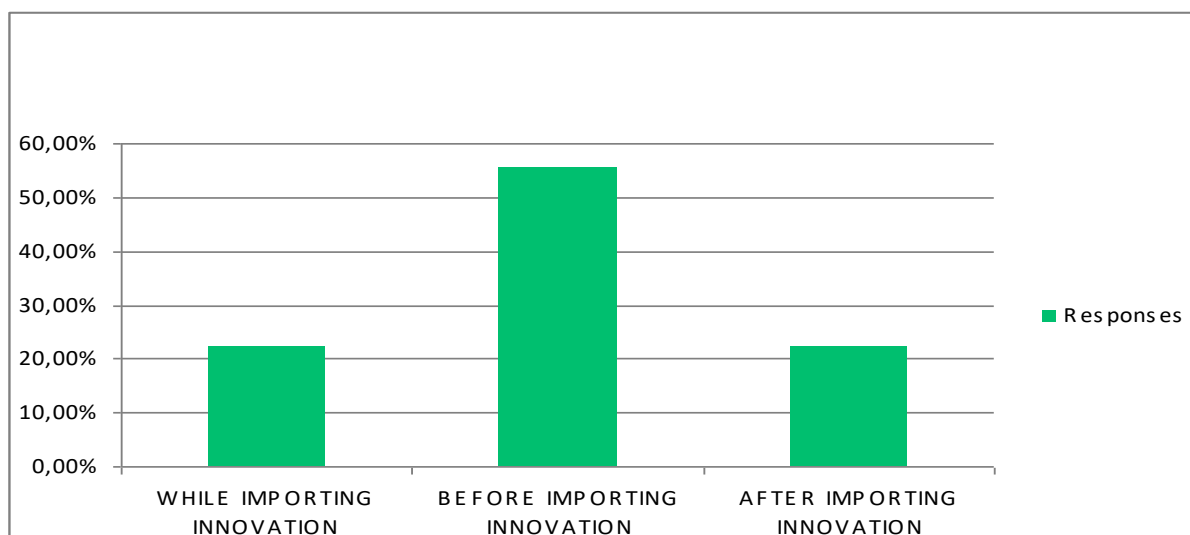
Source: Authors' research

Then, out of the nine respondents who answered the question before and perhaps, 55% of them thought that market research was done before innovation was introduced, while 22% of them considered that this was being done when introducing innovation and 22% of them were said to be doing introducing innovation.

18. Does the company have a specific budget for marketing research?

Answer Choices	Responses	
YES	15,38%	2
NO	69,23%	9
MAYBE	15,38%	2
Answered	**13**	
Skipped	**0**	

Chart 18
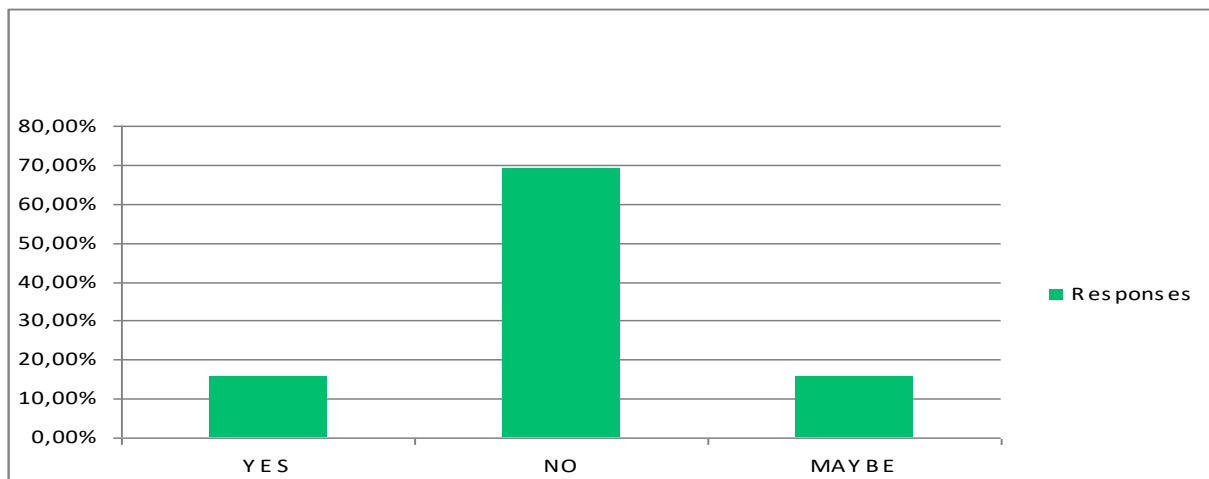
Source: Authors' research

The resumption of the survey questionnaire provides an answer to how many people think that the company has a specific budget for marketing research. An alarming figure of 9 is holding that something does not exist in the companies they work in.

19. Does the marketing budget drastically change in introducing innovation?

Answer Choices	Responses	
YES	30,77%	4
NO	53,85%	7
MAYBE	15,38%	2
Answered	**13**	
Skipped	**0**	

Figure following on the next page

Chart 19
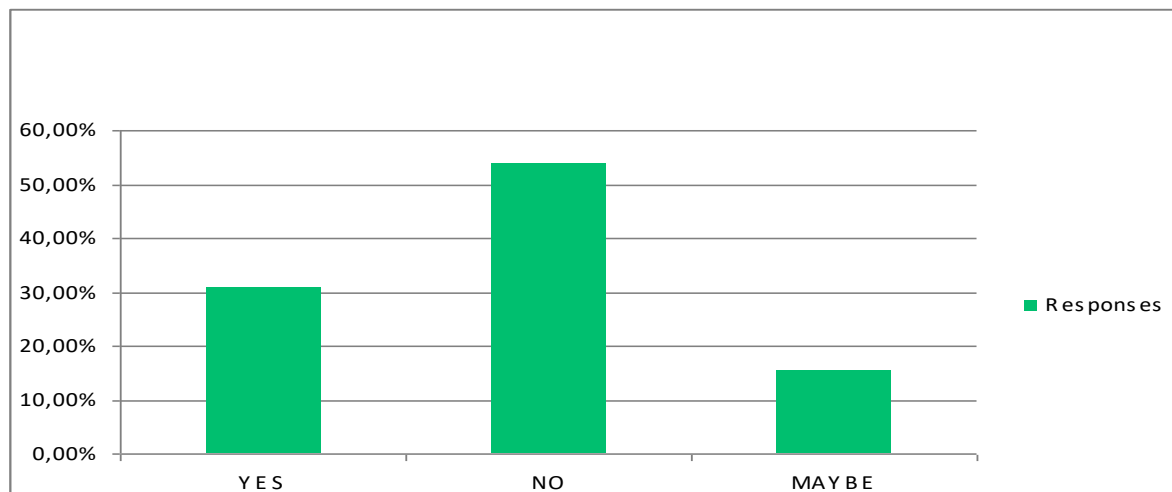
Source: Authors' research

We also find out whether there isn't any major change in the marketing budget when introducing innovation. Most, 54% respond to no change, which means that the companies are well prepared for this process.

20. Is the innovation generator (or R & D department) involved in the process of launching a new product / service?

Answer Choices	Responses	
YES	38,46%	5
NO	46,15%	6
MAYBE	15,38%	2
Answered	**13**	
Skipped	**0**	

Chart 20
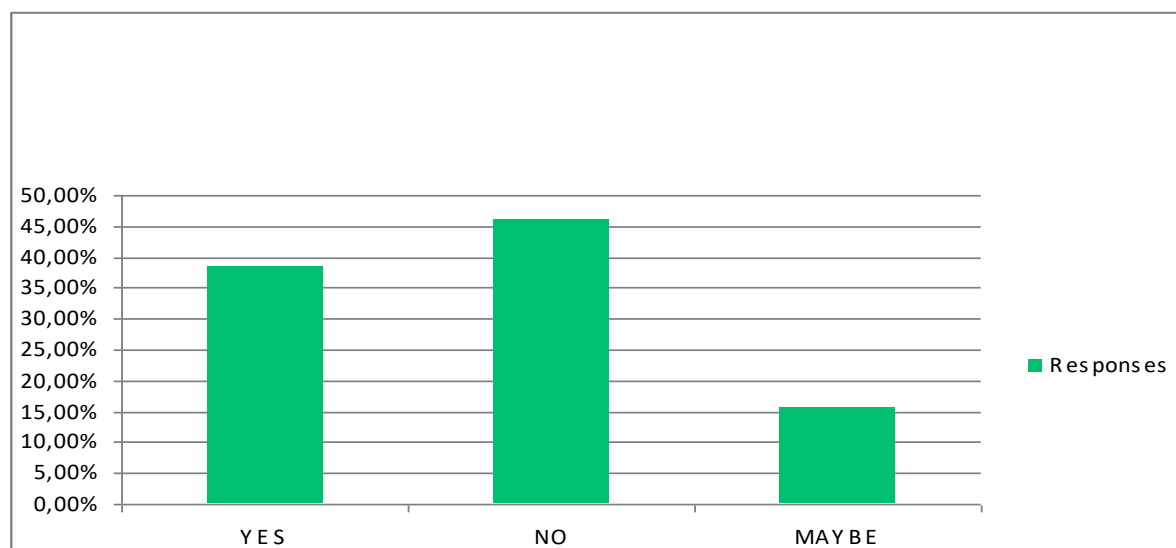
Source: Authors' research

Then, on the question of whether the innovation generator is involved in the process of launching a new product / service, we get 38% of respondents with positive response and even 46% of respondents are involved with a negative response.

21. Is the innovation generator (or R & D department) involved in the distribution of the new product / service?

Answer Choices	Responses	
YES	46,15%	6
NO	30,77%	4
MAYBE	23,08%	3
Answered	**13**	
Skipped	**0**	

Chart 21
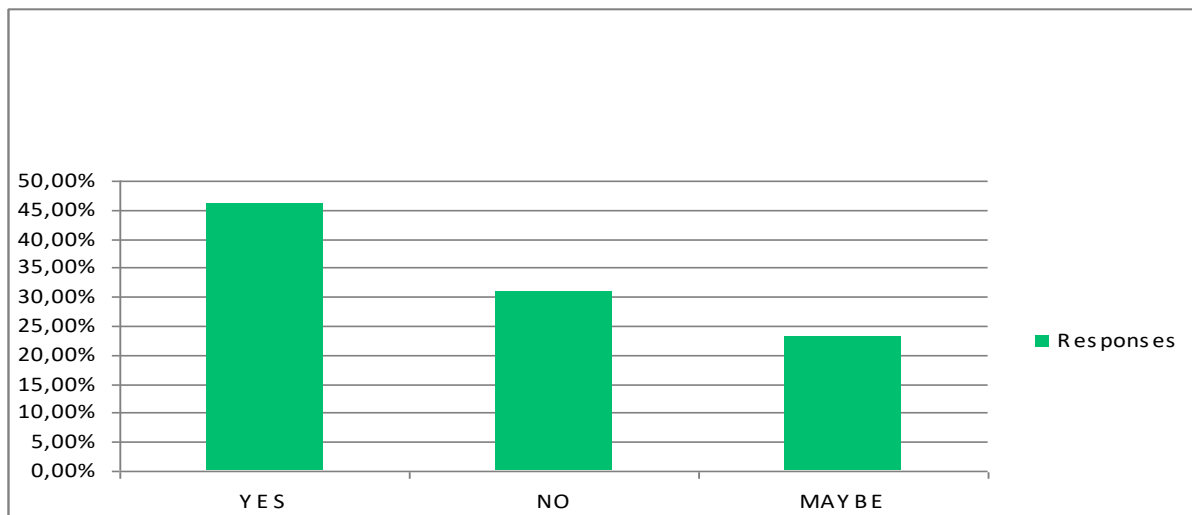
Source: Authors' research

Despite the previous query on the innovation generator's involvement in the process of launching a new product / service, we have a greater involvement of the innovation generator in the process of distributing the new service / service by 46%, and lack of involvement with 31% of the response.

22. Are the criteria for evaluating a new product / service clearly defined?

Answer Choices	Responses	
YES	30,77%	4
NO	30,77%	4
MAYBE	38,46%	5
Answered	**13**	
Skipped	**0**	

Figure following on the next page

Chart 22
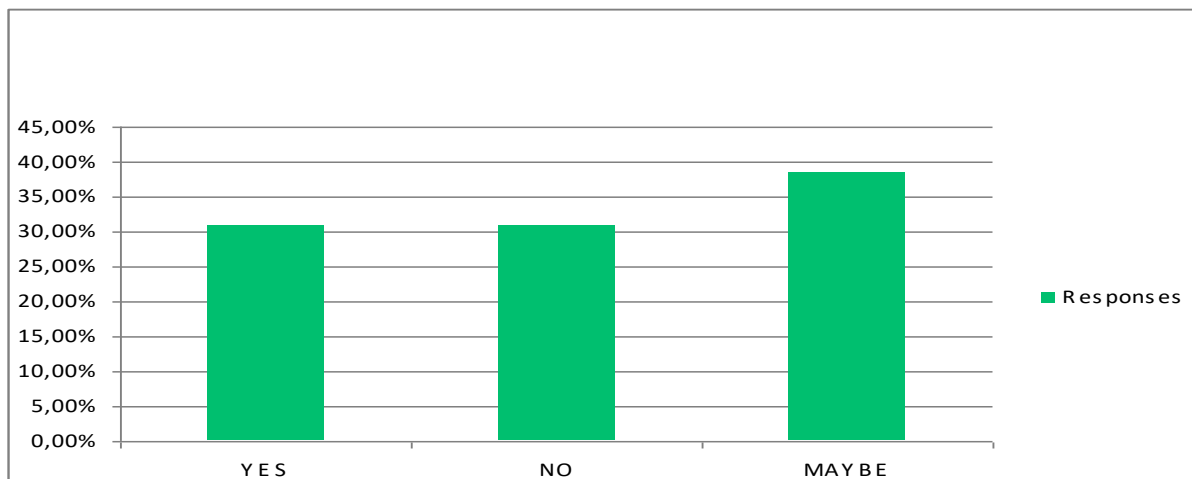
Source: Authors' research

In addition to the question of clarity and definition of the evaluation criteria of a new product / service, almost the same number of respondents responded to the above mentioned fact that they did not, along with one more on the side of those who are not sure in statement above.

23. Do you believe that the process of developing a new product in a company is flexible according to market requirements?

Answer Choices	Responses	
YES	76,92%	10
NO	0,00%	0
MAYBE	23,08%	3
Answered	**13**	
Skipped	**0**	

Chart 23
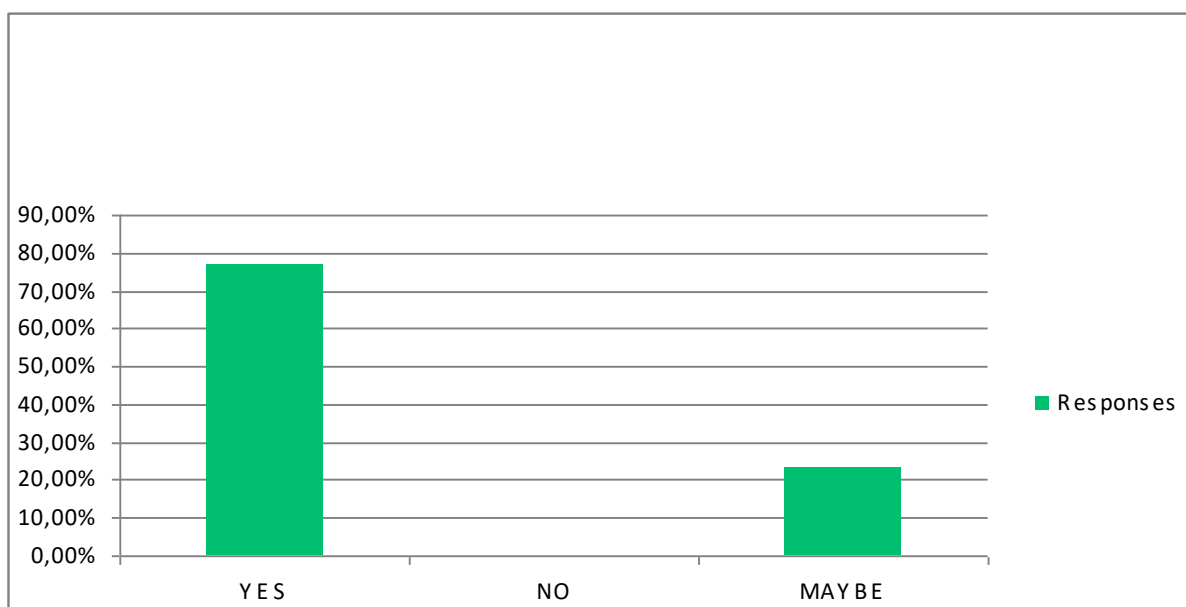
Source: Authors' research

Then, 77% believe that the process of developing a new product in the company is flexible to market demands, while 23% are not sure. Interestingly, none of the respondents confirms the negative answer to the previous question.

24.Does top management provides resources for the development of a new product / service?

Answer Choices	Responses	
YES	84,62%	11
NO	0,00%	0
MAYBE	15,38%	2
Answered	**13**	
Skipped	**0**	

Chart 24
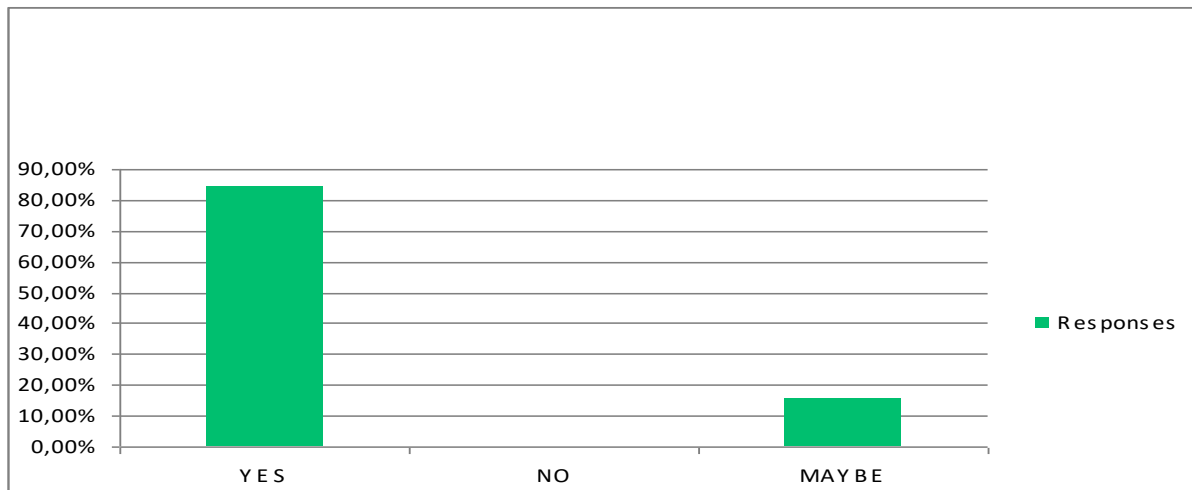
Source: Authors' research

A further question in the questionnaire is set out to determine the involvement of the highest management in resource assurance for the development of a new product / service. At most, for 11 respondents, there is a confirmation that there is such a type of involvement.

25. Do you think that the company you represent is innovative?

Answer Choices	Responses	
YES	46,15%	6
NO	15,38%	2
MAYBE	38,46%	5
Answered	**13**	
Skipped	**0**	

Figure following on the next page

Chart 25
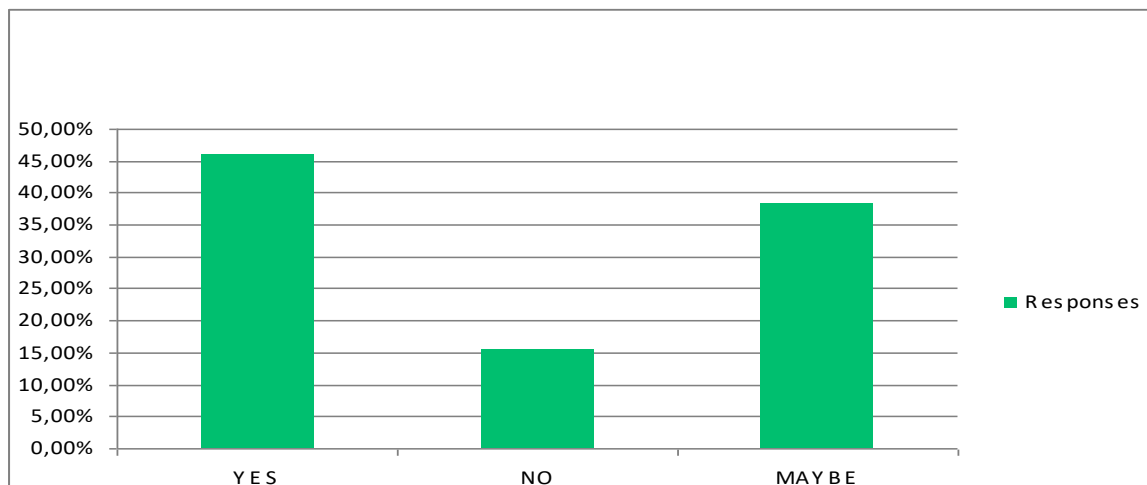
Source: Authors' research

Furthermore, we find out that 46% of respondents believe that their company is innovative.

26. The age group you belong to?

Answer Choices	Responses	
>30 years	0,00%	0
30-40 years	0,00%	0
41-50 years	7,69%	1
51-60 years	23,08%	3
61<	69,23%	9
Answered	**13**	
Skipped	**0**	

Chart 26
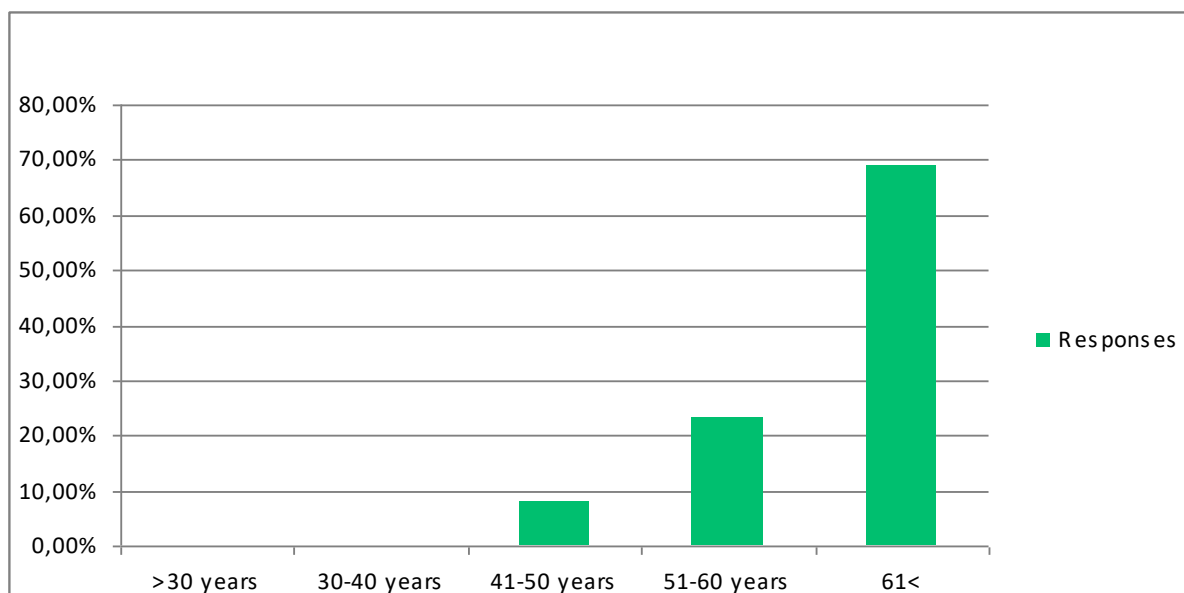
Source: Authors' research

From the age structure of 13 respondents we found out that the largest proportion of those older than 61 years, up to 69%.

27. Your gender is?

Answer Choices	Responses	
MALE	92,31%	12
FEMALE	7,69%	1
DON'T WANT TO ANSWER	0,00%	0
Answered		**13**
Skipped		**0**

Chart 27
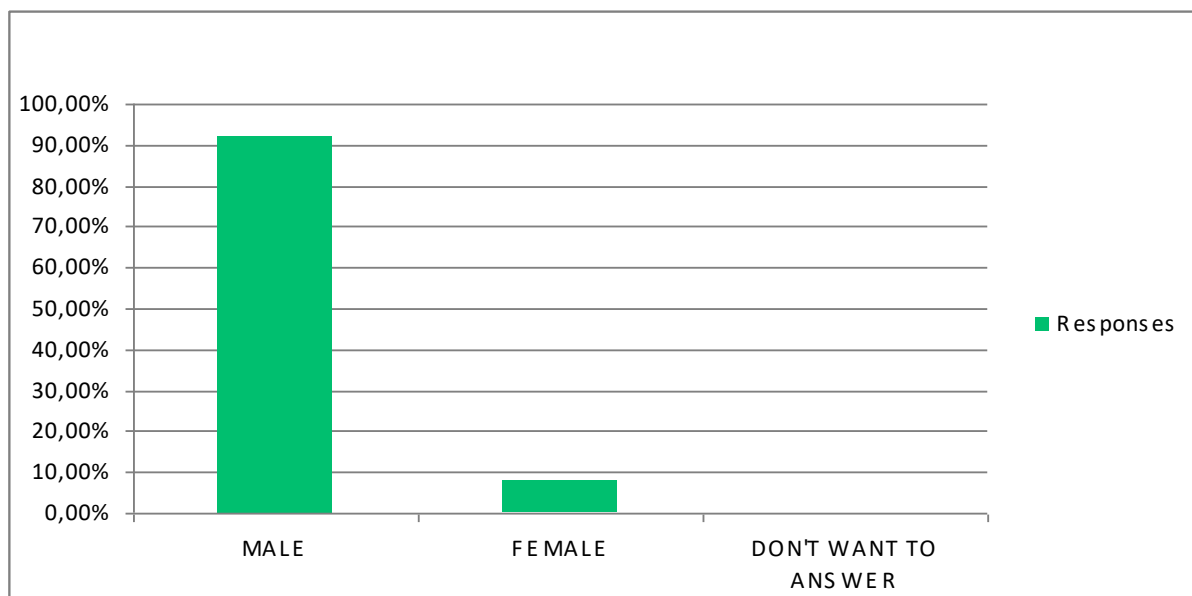
Source: Authors' research

We further find out that 12 respondents are men.

28. Your school education is:

Answer Choices	Responses	
LOWEST SCHOOL EDUCATION	0,00%	0
HIGH SCHOOL EDUCATION	30,77%	4
COLLEGE EDUCATION	7,69%	1
HIGH PROFESSIONAL EXPENSE	46,15%	6
MASTER'S DEGREE	15,38%	2
MASTER'S SCIENCE DEGREE	0,00%	0
DOCTORS OF SCIENCE	0,00%	0
Answered		**13**
Skipped		**0**

Chart 28
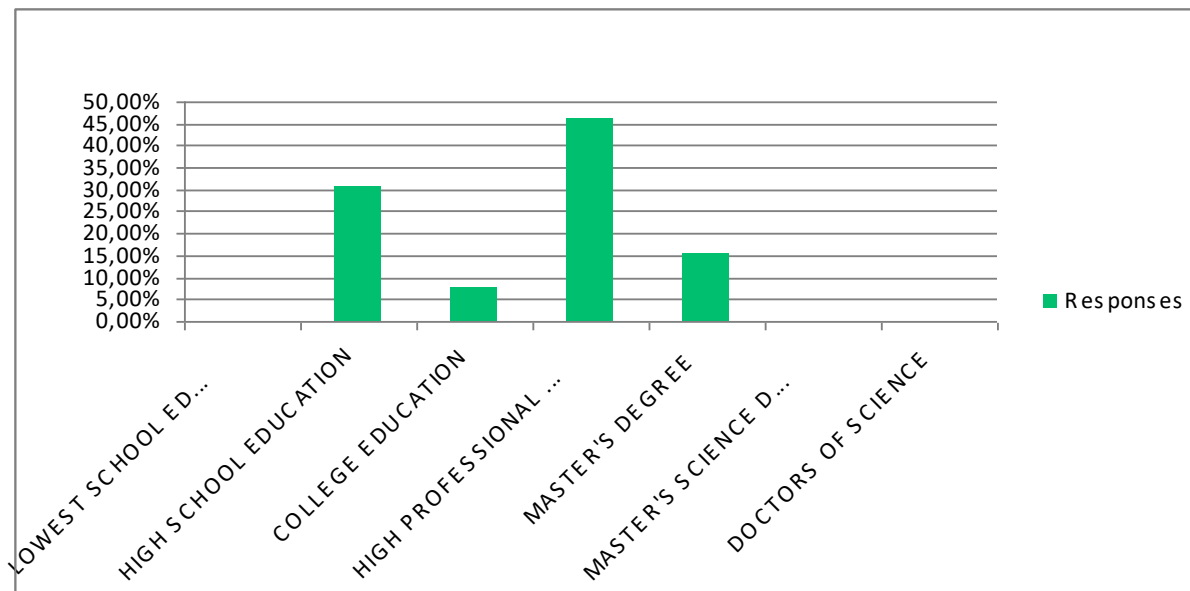
Source: Authors' research

From the previous question we learn more about the school enrollment of the respondents, and the majority of them with high school qualifications - 46%, and surprisingly high percentage of them with high school - 30%.

29. Your qualification is:

Answer Choices	Responses	
ECONOMIC	7,69%	1
LAW	0,00%	0
TECHNICAL	76,92%	10
OTHER	15,38%	2
Answered		**13**
Skipped		**0**

Figure following on the next page

Chart 29
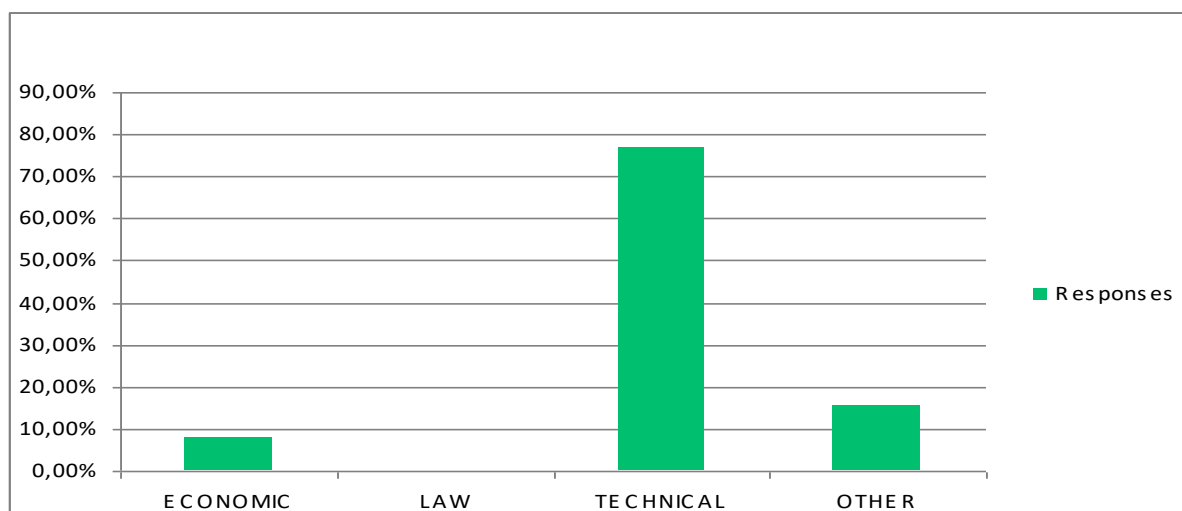
Source: Authors' research

The last question of the questionnaire answers the kind of professional qualifications the respondents have. It can be concluded that the largest number of them, 10, are with technical qualifications.

4. CONCLUDING ANALYSIS

Analysing the results of the questionnaire raises the question of the inclusion of the concept of innovation in family businesses in Croatia. Although a large number of them, as per the questionnaire sample, generate innovation as a product and / or service, we have a percentage of 23% who do not. There is a question of sustainability of such companies on a long-term basis. However, it is positive that almost everyone is working to improve the existing business processes from which a conclusion is made about their awareness that outdated business can not keep up with the needs of today's flexible market. A further positive trend is seen in the trust the owners / founders have in the product / service they offer. The whole sample suits you in each case using your own product / service, which is also one of the prerequisites for quality product / service development - trust. For that companies that have been doing business for more than five years prevail and which generate revenues of more than $ 100,000 on the development of a new product, half of which represent up to 20% of total revenues, it is alarming that none of them has a separate research and development department new products / services. Although they have a certain number of employees working on it, the question is whether they would earn more revenue to invest in that staffing department. Of course, this requires some investments, but perhaps in most of them, the revenue share from the development of a new product / service in the total revenue may increase. What everyone should do is market research that should become an integral part of the development of a new product / service in all companies, and not just, specifically, in the example, in 23% of them. The basis for market research is to examine the needs of the market, and for the proper launch of a new product / service, this is a basic precondition for survival. A certain part of the company is examining the needs of the market, but mostly before introducing innovation, which is not enough, because it is necessary to monitor targeted market reactions, both on and after innovation, in order to make the necessary adjustments. This is also due to the fact that a relatively small percentage of those companies where the idea generator remains involved in the processes of launching and distributing a new product / service. Even though most think that the process of innovation development in their companies is flexible, as many as 30% are those who do not have clearly defined evaluation criteria for a new product / service and as

many as 38% of them are not sure. It is to be concluded that both companies must make progress through a clear identification of innovation goals and everything that is needed to make it successful. Then we conclude that less than half of family businesses think that they are innovative. Although import competition is a big challenge for Croatian family businesses, there are certainly some business processes that must change to be competitive. This includes investing in new technological processes and investing in quality and knowledgeable young people capable of leading the company and capable of creating an innovative image of the company. Younger management is more inclined to digitize business, which is now a prerequisite for overall business improvement. Upcoming generations in family businesses to ensure enterprise survival must have the following features

- awareness of the importance of innovation,
- Maintaining an innovative business culture,
- expression of two-way communication between employees and management,
- the clearness of business strategies and set goals,
- willingness to invest the time and resources needed for the business of the company they work in.

Croatian family businesses are thus in a positive trend aware of the importance of innovation for further survival in the market, although there are still many elements that need to be improved in order to have a wholly innovative, and competitive entrepreneurship.

LITERATURE:
1. Bowonder, B. et al. (2010): Innovation strategies for creating competitive advantage, Research Technology Management, 19-32.
2. Boddy, D. (2008): Management, Prentice Hall, London, p. 435
3. Kružić, D., Bulog, I. (2012): Family Enterprises - Life Cycles, Success and Sustainability, Faculty of Economics, Split, pages 100-122
4. Kružić, D., Bakotić, D., Bulog, I., Dulčić, Ž. and Associates (2016): Family Entrepreneurship, Logotip, Š. Brijeg, pages 61-66
5. Klepić, Ž. (2013): Strategy and Strategic Planning, PowerPoint Presentation
6. Buble, M. (2011): Business Management, Stega Tisak, Zagreb
7. Šerić, N. (2009): Product Development and Design and Brand Management, University of Split, script
8. https://home.kpmg.com/en/en/home/insights/2016/11/europski-barometar-obiteljskih-poduzeca-2016.html (visited 31.1.2018)
9. http://www.pravaideja.net/istrazivanje-i-razvoj-proizvoda/(visited 31.1.2018)

ADAPTATION OF E-LEARNING TOOLS AS INNOVATION: OVERCOMING BARRIERS USING EDUCATIONAL FACTORS

Lina Gaiziuniene
Kaunas University of Technology, Lithuania
lina.gaiziuniene@ktu.lt

Brigita Janiunaite
Kaunas University of Technology, Lithuania
brigita.janiunaite@ktu.lt

ABSTRACT
There are quite few studies in the field of education that analyse the process of educational innovations adoption and even fewer that analyse the adaptation phase. In most cases, researchers (e.g. Khatri et al., 2013; Orr & Mrazek, 2009; Pernaa & Aksela, 2013) focus on the result whether the innovation has been adopted or not, however, there is too little research explaining how it has been modified. This article focuses on the process of currently popular e-learning tools adaptation. Researchers (e.g. Gounary, Koritos, 2012; Kirkman, 2012; Hariri, 2014; Serdyukov, 2017) agree that an educational innovation (including e-learning) process and the process of its adaptation are dependent on a number of factors, for example, educators should possess appropriate skills in order to adapt that innovation according to the needs and expectations of its users, and these modifications should go in line with the learning outcomes and the goals of the curriculum in general. After defining key terms and establishing a rationale for adaptation, we present a general framework to organize adaptive innovation system. The article presents a case of educational practice, illustrated by interview results that reveal the peculiarities and barriers for adaptation of e-learning tools. In order to eliminate barriers which have arisen and can arise, the environment is modelled that emphasizes educational factors, such as student's characteristics, educational innovation features, etc.
Keywords: *adaptation, barriers, educational factors, e-learning tools*

1. INTRODUCTION
Educational innovations can improve learning outcomes and the quality of education provision. Also they could help enhance equity in the access to and use of education, as well as equality in learning outcomes (OECD, 2016, p. 13). However, according to OECD (2014) research data, the speed of innovations adoption in the area of education is lower than average: about 38 % of graduates maintain that their educational institution was active in the area of innovations adoption. Even when one comprehends that most educational innovations can bring benefits to both educators and learners, there are certain reasons preventing adoption and use of innovations. Zolait (2014) claims that in order to survive in the modern changing society and to function successfully, it is necessary for any organisation to find ways how members of the organisation could adopt innovations in a fast and simple way and to employ them in organising everyday activities. Adoption of innovations is faster and better when innovations are close in cultural, social and values terms. While pursuing the adjustment of educational organisations to the changing society and successful adoption of innovations, it is mandatory to understand the benefits of educational innovations and to achieve the highest possible percentage of their adaptation. There are quite few studies in the field of education that analyse the process of educational innovations adoption and even fewer that analyse the adaptation phase. Most often research related to the process of educational innovations adoption develops or adapts educational innovations and tests if they will be adopted, or not (Khatri, Henderson, Cole, Froyd, 2013; Orr, Mrazek, 2009; Pernaa, Aksela, 2013), but little investigation is made into

how they were adapted for students. Therefore, an issue emerges as to how the process of educational innovations adaptation takes place, what obstacles emerge in the process of adaptation and what educational factors would empower successfully adapt educational innovations? To answer the questions, first, the key terms and activities of adaptation are presented, then, a case of e-tools adaptation is presented, and in the third part, the adaptive innovation system is modelled that emphasizes educational factors.

2. KEY CONCEPTS: ADOPTION, ADAPTATION, ACTIVITIES OF ADAPTATION

Mulgan (2006) claims, that in terms of social innovations when innovative ideas are used to solve emerging problems, challenges or difficulties, a number of ways (or innovations) are employed. To be able to assess the impact of innovations, adoption of innovations has to take place. As Denning (2012) and Zolait (2014) maintain, the process of adoption is the decision phase to adopt or to reject innovations. During the phase the users of innovations make a decision to learn, adopt and use a new practice, products or ways of activities, or to reject them. The process of adoption is further divided into smaller phases. Denning (2012) presents a classification in which the phase of innovations adoption is divided further into three parts. According to the author, first, when a person learns about an innovation, s/he considers and assesses to what extent the innovation is acceptable to him/her, how useful it would be to solve an emerging problem and compares to the present experience of innovations adoption. Later, after assessing the advantages and disadvantages of innovations, tries to test it. Resistance to innovations may take place in this phase, and if it has been overcome, then innovations are tested. Later, a constant self-encouragement and motivation are needed to apply the innovations in the everyday activities. Thus, adaptation becomes possible when users of innovations decide to correct them and adapt to their needs. Adaptation of educational innovations is needed for the achievement of particular aims. However, Akrich, Callon and Monagham (2002) emphasised another aspect of the adaptation process – a successful adaptation of innovations is compared to a successful adoption of innovations. Hord et al (2013) maintain that the adaptation of educational innovations begins with establishment and choice of adapted elements. Further, it is shaped what an educational innovation should look like in its practical application. Next, a small number of users representing as diverse representation of population as possible is selected, and they help to establish maximum diverse ways of using innovations. Step three, a list of adapted elements is drawn with a vision how they will be modified and consultations take place with the developers of innovations about variations of observed educational innovations use. Step four already employs a working version of adapted elements list to conduct surveys and to find out a real use of educational innovations. Surveys often help to discover new adaptable elements, variations and dimensions of adaptation. With the compilation of this list the implementation of educational innovations begins when the distinguished adopted elements are tested in practice (Hord et al 2013). Basically, drawing the four-step map of educational innovation adaptation represents the main actions, such as to consider how educational innovations should look in practice, to compile a list of adapted elements, to consult with the developers and implementers of educational innovations on how to adapt selected elements, and to test the adapted educational innovation. Similar stages of adaptation process are highlighted by Blonder et al (2008). The stages they highlighted include selection of educational innovation, its adaptation to the knowledge, motivation, interests and experience of students and presentation of adapted education innovations to its developers and others colleagues in order to get their recommendations, views and suggestions on how to adapt. After these observations further corrections are carried out and adapted educational innovation is tested with learners. This process allows to test the appropriateness and vision of adaptable elements distinguished by the teacher. Opinions of several experts allow to validate the selected strategy of adaptation.

Thus, key educational innovations adaptation activities include the establishment of adaptable elements, modification of adaptable elements, consultations regarding the adapted elements with the developers of educational innovations, testing of adapted educational innovation and analysis of adapted elements. Activities take place in a continuous cycle. The model of technologies impact of learning process presented by Puentedura (2005) emphasises how a particular teaching tool is adapted and how more complicated become the levels of its use. This model developed by Puentedura is based on Bloom's taxonomy and demonstrates that there are four stages of impact on learning process and they are directed at certain learning aims of every stage:

- At the level of substitution an educational innovation replaces present technologies and means by a new one. E.g. an interactive Google Earth globe is used instead of a simple paper atlas when learning country names.
- At the level of augmentation educational innovations replace tools with their functional improvement. E.g. animations, 3D models instead of posters and, in the concrete example, additionally used Google Earth calculator function to measure distances between different points on earth and to apply knowledge to measure distances.
- At the level of modification, educational innovations allow significant modification of learning activities. E.g. processing and representation of information: instead of analysing the photographs of locations, their special image is studied, which is already a modified activity, allowing the analysis of a location by using their special image.
- At the level of redefinition, educational innovation fully replaces previous tool and at the same time transforms learning process, and new, previously inconceivable activities emerge. E.g. a virtual tour is created by means of Google Earth, and even a guide's comments on the virtually visited locations are added, in addition, there is a possibility to share the tour with others by giving the internet link.

Thus, having discussed the key concepts and activities, the paper will further describe a case of eTwinning project in which teachers and pupils from three countries applied and adapted the tools of e-learning. To achieve the aims of pupils' development, educational innovations were adapted. Interviews with teachers were conducted and questions about what and how they adapted and the barriers they faced were asked.

3. A CASE OF ADAPTATION: ETWINNING PROJECT NOS ESPOIRS

Teachers and pupils from three countries, Lithuania, Poland and France participated in the project. The age of participating pupils was between 10 and 16. The Lithuanian group comprised 14 pupils of one 5th form, the French group was made up of 23 pupils of the 6th form, and the Polish group was a mix by the age of pupils and their level of French because it consisted of 8 pupils from 10 to 16 years old. The project commenced in 2017. The language of the project is French, but as French pupils participate in the project, they carry out some tasks in English. The project integrates the subjects of music, technologies and a foreign language. The topic and the title of the project, "Our Hopes", is rather abstract but the foreseen output of the project is very specific – a jointly created song in French. Project activities were divided into three stages, foreseen in TwinSpace environment of the project:

1. Pupils introduce themselves, present their school and town in the working language of the project, French. A virtual board, Padlet, is used for presentations. After the introductions an interactive quiz is carried out.
2. In groups, pupils create word clouds on the topic of hope. Their work is published in TwinSpace environment and they vote for the most favourite word cloud which will become the project logo.
3. Song "Our Hopes" is created, it is recorded by pupils of every partner country.

Virtual board Padlet was chosen, pupils use their devices to connect online and they can write small texts, upload different types of files (sound, video and text) and to share links. Another advantage of the virtual board is that it is possible to save the result of joint work. Another tool that was chosen, was "Kahoot", an interactive game-based platform. It allows to create close-ended quiz questions. Pupils use their computers or portable devices to log in online and answer interactive quiz questions. At the end of the quiz everyone can see all results and mistakes that can be analysed by the group. The third tool was "Tagul", an online word cloud generator, which helps create a picture by using words. Words are entered into a special table and the system automatically generates a picture. The last tool that was used to record the song, was "Speakpipe". It is a webpage that allows to record a voice message up to five minutes and share it via all kinds of internet devices and it is suitable to develop the vocabulary of a foreign language. During the project all teachers tested the tools individually first and marked it as a necessary stage in order to be able later to explain to their pupils how e-tools work: "Before every lesson I test the tools, it was both with Padlet and Tagul, to be able to explain to my pupils how they work." (Poland II). "Before starting to use them with pupils? Yes, of course." (France II); "… first I tried them myself to create and work with them because I needed first to familiarise myself to present them to pupils and show how they work." (Lithuania II). This stage is important in a sense that having tested the tool, it is identified what should be adapted for the tool to be effective. However, this was revealed only in the case of the project carried out by the Polish teacher: I think, there are tools, e.g. Speakpipe, that are not designed for school […] we tried to record a small clip, but then we could hear in the recording noise and other sounds, we could even hear the breathing of pupils." (Poland II). In Lithuania the barriers faced was a lack of suitable educational environment, when there are not enough computers in the classroom and limited access to the computer classroom and to be able to connect properly to TwinSpace and virtual board Padlet, the teacher could organise the process by using her own computer only: "… we have an IT classroom next door, they are two at school and they are used a lot, therefore, it is difficult to find time let the children in and provide an opportunity for them to connect online. That is why we most often used our lesson time and would log in at the classroom computer …" (Lithuania II). In terms of educational environment, there were no problems in France, where they have suitable facilities for tasks with software: "Pupils had many classed scheduled in a computer lab where they themselves made their presentations, they found a lot of pictures representing our region and school and uploaded them to eTwinning platform." (France II). The teacher from Poland did not indicate any problematic elements of educational environment. All participants also distinguished assessment, all used almost completely different in comparison to traditional lessons, with regard to the peculiarities of intercultural project, and of course, the use of e-learning tools. The Lithuanian teacher did not say much about her assessment methods, but one could assume that she did not adapt it and was the only one who expressed a more serious attitude to assessment: "Assessment in this part is very important because children write in those applications in French. Therefore, I have to check what and how they write, and if they wrote with mistakes – I have to correct them." (Lithuania II). While the representative of Poland has an opposite view on assessment and refused to correct students' mistakes: "If you want to introduce yourself in one phrase – you can do it, I will not correct your phrase and will not check how long the introduction is. Of course, you cannot write stupid things, but it is possible to introduce oneself by using a short phrase like - Salut, c'est Michael" (Poland II). It is obvious that communication achieved is more important than mistakes and a positive attitude prevails: „And I offered to my pupils to write one mark in the semester to for participation in eTwinning project, [...] this is a separate evaluation, we have to emphasise that eTwinning tasks are presented as extracurricular and such tasks have to be assessed in a certain way and to encourage work by such means." (Poland II). The French representative: „And assessment is completely different, in a regular lesson –

the usual evaluation, and in the project, [...] it is an absolutely positive assessment, everyone is rewarded and encouraged and the aim of the project is not linguistic, rather – it is a cultural revelation, therefore, assessment [...] is always positive" (France II). However, such assessment in France was determined by the fact that the project was not aimed at learning French for French students; it was more about learning English as a foreign language. The elements to be adapted were more distinguished in France and Poland. Firstly, the teacher in France had to decide how to use Padlet with 23 students so that the virtual board is not overcrowded with texts: "For instance, as I have 23 students in my class, and everyone writes 2-3 texts of presentations, this way our wall was too overcrowded, therefore, we made a rule that everyone writes one text." (France II). In addition, the teacher discovered how to apply the same platform to encourage learning of English: "As I know how effective immersion is, and in eTwinning platform there is an option to change a language, I encouraged pupils to change language settings to English, and at first they were very confused but gradually they got the associations…" (France II). The feedback from the Polish teacher allowed to highlight the fact the she had to adapt the entire lesson plan to be able to use an e-learning tool: "If I want to do a task with the use of Padlet by using e-learning tools, I have to change the lesson plan and instead of 5 tasks it is better to do three and this required me either change the plan or, on the other hand, to integrate into the exercises such tasks that are related to e-learning tool, thus, to reformulate, or to be more exact, to change the idea of the lesson" (Poland II).

4. ADAPTIVE SYSTEM BASED ON EDUCATIONAL FACTORS

Thus, the case we presented, demonstrated adaptation peculiarities and particular obstacles of the same applied innovations in different countries. Further, key educational factors allowing to adapt educational innovations as successfully as possible, are emphasized. Educational factors are being modelled on the basis of Shute, Zapata-Rivera (2007) adaptive system concept. The goal of an adaptive system is to create an instructionally sound and flexible environment that supports learning for students with a range of abilities, disabilities, interests, backgrounds, and other characteristics. The challenge of accomplishing this goal depends largely on accurately identifying characteristics of a particular learner or group of learners—such as type and level of knowledge, skills, personality traits, and affective states—and then determining how to leverage the information to improve student learning (e.g., Conati, 2002; Park & Lee, 2003, in press; Shute, Lajoie, & Gluck, 2000; Snow, 1994). With regard to the adaptation process discussed in this article previously, and adaptation peculiarities and barriers set during the research, we can design an adaptive system based on educational factors relevant to educational innovations.

Figure following on the next page
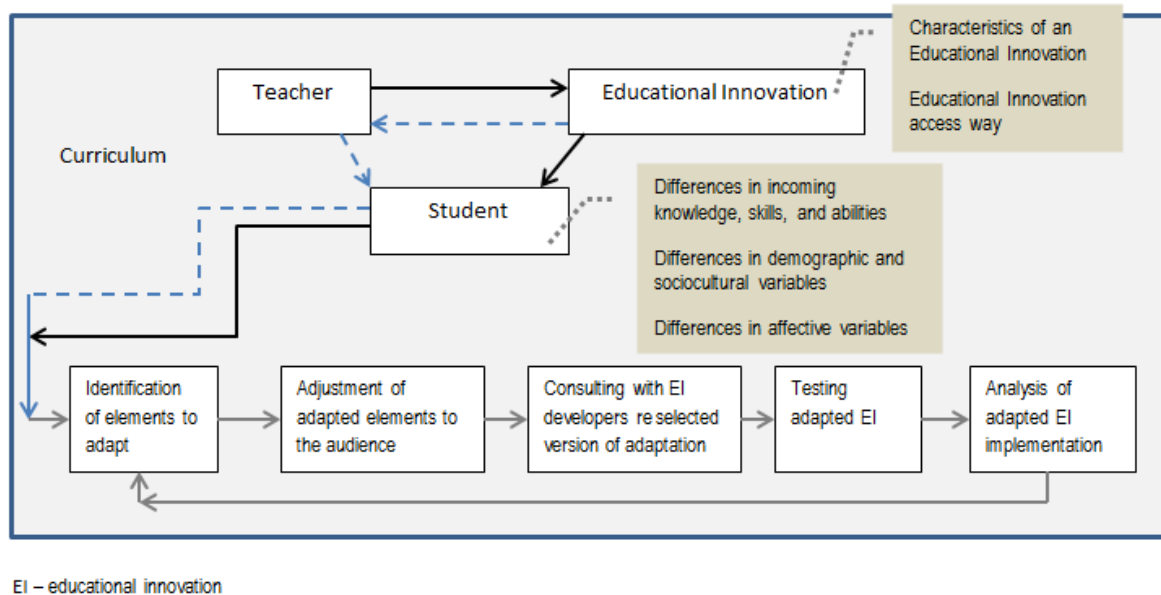
Figure 4: Adaptive system based on educational factors

Teachers, educational innovations and students become one of the main educational factors of an adaptive system. It is important to stress that in an adaptive system the educational innovation itself and its features become one of educational factors (see Figure 1). Then each educational aspect is separately analysed. Rogers (1995) distinguishes five key features of innovations that either make the process of innovations adaptation easier or more difficult. One of them is a relative advantage. This feature indicates how much benefit, advantages and meaning an innovation brings to the usual activities/behaviour/methods of a teacher. In most cases, before adapting an innovation the teacher tries to collect information on how it will be useful in his/her activities, to what extent activities will become more efficient when s/he or his/her students start using an educational innovation. Damanpour, Schneider (2008); Gounaris, Koritos (2012); Jameson (2013); Merton (2013) emphasise the component of benefit. According to these authors, information on possible and future benefits is collected before adapting an innovation. The more information is collected or the sooner a benefit is obtained, the easier the process of innovation adaptation becomes. Educational innovation may be beneficial to the teacher or it may be directed to the learner. Another educational innovation distinguished by Rogers is compatibility with personal values, attitudes, beliefs and culture of every user of innovation. One more feature important for adaptation is their complexity. Complex innovations are adapted at a slower rate because the more a teacher has to learn again, the longer it takes to modify the innovation to be suitable for students. If an innovation is easy to understand and to perceive and it is easy to learn how to manage it and does not require much effort, then its adaptation will take place faster. Two more important features of innovations – testability and evidence of results. During the phase of innovation adaptation, an attempt is made to collect information, if an innovation could be tested and what the results of the innovation implementation by other organisations/users are. An teacher who has a possibility to conduct a lesson in a novel way (i.e. to implement a particular educational innovation) will feel more secure because s/he will get an advance possibility "to test" his/her abilities to act in a new way. In addition, when it is possible to foresee the results of innovation, they could be presented to students in advance. Even if before adopting an educational innovation a possible particular benefit and results are observed, then an intent on a learner's side to accept it will be much higher. The way how an educational innovation reaches its users has a direct impact on the procedure of adaptation.

According to Janiūnaitė (2004), educational innovations can be both internal and external, i.e. they can be developed in the local culture or "borrowed" from another culture. They can be developed in the educational system of the same country, in different educational institutions, organizations and research institutes or centers, this way educational innovations will be internal. If they are developed in other countries and taken over by researchers, educationalists and representatives of education in different countries and implemented in educational systems if those countries, in this case innovations will be external. Lakhani, Jeppesen, Lohse, Panetta (2007) emphasize that external educational innovations most often lead to more radical changes. It is more difficult to adopt them (because they require more alterations and modifications) but more often result in success as the ways/methods of behaviour/activities have been more radically changed. Tura, Harmaakorpi, Pekkola (2008) do not agree with this point of view. They argue that internal innovations are closer to their users by their cultural, value, moral, economic and social background. Due to these aspects they require fewer alterations when adaptation takes place, and their adoption could be met with less resistance. Thus, the benefit of innovations is greater. Slantcheva – Baneva (2010) agrees with the latter by maintaining that local academics and practitioners when developing and/or adapting innovations foresee possible factors of resistance and take measures to avoid them. This shortens the process of innovation adaptation as resistance factors have been avoided in advance. The decision on how to adapt educational innovation depends on an interpersonal interaction between a teacher and student. Serdyukov (2017) claims that in the process of adaptation student is the main "target" to whom educational innovations adaptation is organized. In his opinion, one should not forget that not only annually (perhaps even more often) learner groups developed by the teacher change, and they have different expectations and pursuits. Even with the same group of students, it is always growing and improving. The focus on learners is related to the adaptation of educational content to learner groups and different characteristics of their groups:

- Differences in incoming knowledge, skills, and abilities. The first reason for adapting educational innovation content to the learner has to do with general individual differences in relation to incoming knowledge and skills among students (Durlach, Lesgold, 2012). These differences are real, often large, and powerful. Many have argued that incoming knowledge is the single most important determinant of subsequent learning (e.g., Glaser, 1984; Tobias, 1994). Thus, it makes sense to assess students' incoming knowledge and skills to provide a sound starting point for teaching. A second reason to adapt content to learners has to do with differences among learners in terms of relevant abilities and disabilities (Durlach, Lesgold, 2012). Lippke, Wegener (2012) maintains that learners possess highly different levels of abilities; therefore, educational innovations have to be oriented to abilities and competences of students. One should also keep in mind learners with special needs as their development is not possible without the adaptation of educational innovations.

- Differences in demographic and sociocultural variables. Another reason to adapt educational innovation content to learners relates to demographic and sociocultural differences among students, which can affect learning outcomes and ultimately achievement (e.g., Conchas, 2006; Desimone, 1999; Fan & Chen, 2001). Irungu et al (2016) established that a demographic and social context has impact on student interests, attitudes, aspirations and values, which directly affect a learning process. The closer and more adapted it is, the more successful students are in academic achievements.

- Differences in affective variables. In addition to cognitive, physical, and sociocultural differences, students differ in relation to affective states—many of which influence learning—such as frustration, boredom, motivation, and confidence (e.g., Conati, 2002; Ekman, 2003; Litman & Forbes-Riley, 2004; Picard, 1997; Qu, Wang, & Johnson, 2005).

Ni, McKlin, Guzdial (2010) state that teachers tend to adapt educational innovations because they understand a real benefit to their students. They invest more time and efforts to interest, motivate and involve their students more, to give them more confidence and empower them to become self-directed learners.

Thus, an adaptive system works in two ways. In the first case, when a teacher chooses an educational innovation, be it a method or an e-learning tool, s/he adapts it depending on an educational innovation and learners (black arrows in the picture indicating links). In the second case, there is a directive to apply a selected educational innovation, and its adaptation also depends on the characteristics of innovation and learners (blue dotted arrows in the picture). The process of adaptation is smoother in the first case as it meets lower resistance from a teacher. The process of adaptation can be different in every curriculum (Uys, 2007; Maritz el at, 2014) and is directly dependent on educational factors: learners and educational innovation.

5. CONCLUSIONS
Adaptation of educational innovations is one of the stages in the process of educational innovation adoption. This stage is possible when the teacher decides to modify and adapt it to his/her needs. Key activities of educational innovation adaptation include identification of the elements to adapt, their modification, consultations with developers of educational innovation about adapted elements, testing of adapted educational innovation and analysis of adapted elements. The activities continue in a continuous cycle. During the research study while adapting e-learning tools, essential barriers emerged: an e-tool of insufficient quality, educational environment unsuitable for its use, a new system of evaluation and possible its interpretations and a need to adapt an e-tool. An adaptive system allows to decrease emerging barriers when e-learning tools are applied. The adaptation of educational innovations depends on educational factors: educational innovation (characteristics and access way), students and curriculum.

LITERATURE:
1. Akrich, M., Callon, M., Latour, B., Monaghan, A. (2002). The Key To Success in Innovation Part II: the Art of Choosing Good Spokespersons. *International Journal of Innovation Management*, 6(2), 207–225.
2. Blonder, R., Kipnis, M., Mamlok-Naaman, R., Hofstein, A. (2008). Increasing Science Teachers' Ownership through the Adaptation of the PARSEL Modules: A "Bottom-up" Approach. *Science Education International.* 19(3), 285-301.
3. Conati, C. (2002). Probabilistic assessment of user's emotions in educational games. Journal of Applied Artificial Intelligence, 16(7/8), 555–575.
4. Conchas, G. (2006). The color of success: Race and high achieving urban youth. New York: Teachers College Press.
5. Denning, P. J. (2012). Innovating the future: From ideas to adoption. *The Futurist,* , 41-45.
6. Desimone, L. (1999). Linking parent involvement with student achievement: Do race and income matter? Journal of Educational Research, 93(1), 11–30.
7. Durlach, P. & Lesgold, A. (2012). Adaptive technologies for training and education. Cambridge University Press.
8. Ekman, P. (2003). Emotions revealed: Recognizing faces and feelings to improve communication and emotional life. New York: Henry Holt.
9. Fan, X., & Chen, M. (2001). Parental involvement and students' academic achievement: A metaanalysis. Educational Psychology Review, 13(1), 1–22.
10. Glaser, R. (1984). Education and thinking: The role of knowledge. American Psychologist, 39(2), 93–104.

11. Gounaris, S., Koritos, Ch.D. (2012). Adoption of technologically based innovations: The neglected role of bounded rationality. *Product Innovation Management, 29*(5), 821-838.
12. Hariri, A. A. (2014). Adoption of learning innovations within UK universities: Validating an extended and modified UTAUT model. *Doctoral dissertation, Warwick University, 2014.*
13. Hord, S., Stiegelbauer, S., Hall, G., George, A. (2013). *Measuring implementation in schools: Innovation configurations.*
14. Irungu M.B., Njenga K.P., Mwangi G.C., Mugo, K. (2016). Impact of Sociocultural factors on adoption of modern technologies in beekeeping projects among women groups in Kajiado County- Kenya." *International Journal for Innovation Education and Research*. *4*(4), 55-64.
15. Janiūnaitė, B. (2004). Edukacinės novacijos ir jų diegimas. *Kaunas: Technologija.*
16. Khatri, R., Henderson, Ch., Cole, R., Froyd, J. (2013). Successful propagation of educational innovations: Viewpoints from principal investigators and program. *AIP Conference Proceedings, 1513*(1), 218-221. 10.1063/1.4789691.
17. Kirkman, D. M. (2012). Social enterprises: An multi-level framework of the innovation adoption process. *Innovation: Management, Policy & Practice, 14*(1), 143-155.
18. Lakhani, K.R., Jeppesen, L.B., Lohse, P.A. & Panetta, J.A. (2007). The value of openness in scientific problem solving. *HBS Working Paper Number: 07-050. Cambridge: Harvard University.,* Retrieved from http://hbswk.hbs.edu/item/5612.html.
19. Lippke, L., & Wegener, C. (2014). Everyday innovation – pushing boundaries while maintaining stability. *Journal of Workplace Learning, 26*(6), 376-391. 10.1108/JWL-10-2013-0086.
20. Litman, D. J., & Forbes-Riley, K. (2004). Predicting student emotions in computer-human tutoring dialogues. Proceedings of the 42nd annual meeting of the Association for Computational Linguistics (pp. 351–358). San Francisco, CA: Morgan-Kaufman.
21. Maritz, A., Anton, d. W., Buse, S., Herstatt, C., Lassen, A., & Maclachlan, R. (2014). Innovation education programs: Toward a conceptual framework. *Euro Jrnl of Inn Mnagmnt, 17*(2), 166-182. 10.1108/EJIM-06-2013-0051
22. Mulgan, G. (2006). The process of social innovation. *Innovations: Technology, Governance, Globalization, 1*(2), 145-162. 10.1162/itgg.2006.1.2.145 Retrieved from https://doi.org/10.1162/itgg.2006.1.2.145.
23. Ni, L., McKlin, T., Guzdial, M. How Do Computing Faculty Adopt Curriculum Innovations? The Story from Instructors. In *Proceedings of the 41st ACM Technical Symposium on Computer Science Education, SIGCSE'10, 544-548, New York, NY, USA, 2010.*
24. OECD (2014). *Measuring innovation in education: A new perspective*, educational research and innovation. *OECD Publishing, Paris,* http://dx.doi.org/10.1787/9789264215696-en.
25. OECD (2016). *Innovating Education and Educating for Innovation: The Power of Digital Technologies and Skills*, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264265097-en.
26. Orr, D., Mrazek, R. (2009). Developing the level of adoption survey to inform collaborative discussion regarding educational innovation. *Canadian Journal of Learning and Technology, 35*(2).
27. Park, O., & Lee, J. (in press). Adaptive Instructional Systems. Technologies. In J. M. Spector, D. Merrill, J. van Merriënboer, & M. Driscoll (Eds.), Handbook of Research on Educational Communications and Technology (3rd ed.). Mahwah, NJ: Erlbaum Associates.
28. Pernaa, J., Aksela, M. (2013). Model-based design research: A practical method for educational innovations. *Advances in Business-Related Scientific Research Journal, 4*(1), 71-83.

29. Picard, R. W. (1997). Affective computing. Cambridge, MA: MIT Press.
30. Puentedura, R. R., Ph, D. (n.d.). *SAMR : Thoughts for Design*. Retrieved from: http://www.hippasus.com/rrpweblog/archives/2012/09/03/SAMR_ThoughtsForDesign.pdf.
31. Qu, L., Wang N., & Johnson, W. L. (2005). Detecting the learner's motivational states in an interactive learning environment. In C.-K. Looi, G. McCalla, B. Bredeweg, & J. Breuker (Eds.), Frontiers in artificial intelligence and applications: Vol. 125: Artificial intelligence in education (pp. 547–554). Amsterdam: IOS Press.
32. Rogers, E. M. (1995). Diffusion of innovations. *New York: The Free Press.*
33. Serdyukov P. (2017). Innovation in education: what works, what doesn't, and what to do about it?. *Journal of Research in Innovative Teaching & Learning, 10*(1), 4-33.
34. Shute, V. J., Lajoie, S. P., & Gluck, K. A. (2000). Individualized and group approaches to training. In S. Tobias & J. D. Fletcher (Eds.), Training and retraining: A handbook for business, industry, government, and the military (pp. 171–207). New York: Macmillan.
35. Shute, V. J., & Zapata-Rivera, D. (2007). Adaptive technologies. *ETS Research Report Series, 2007*(1), i-34. 10.1002/j.2333-8504.2007.tb02047.x.
36. Slantcheva-Baneva, V. (2010). Modelling for value-added educational service delivery within a first-cycle degree institution: A bulgarian case. *Global Management Journal, 2*(2), 100-109.
37. Snow, R. E. (1994). Abilities in academic tasks. In R. J. Sternberg & R. K. Wagner (Eds.), Mind in context: Interactionist perspectives on human intelligence (pp. 3–37). New York: Cambridge University Press.
38. Tobias, S. (1994). Interest, prior knowledge, and learning. Review of Educational Research, 64(1), 37–54.
39. Tura,T., Harmaakorpi, V., Pekkola, S. (2008). Breaking inside the black box: Towards a dynamic evaluation framework for regional innovative capability. *Science & Public Policy (SPP), 35*(10), 733-744. 10.3152/030234208X363169.
40. Uys, P. (2007). Enterprise-wide technological transformation in higher education: The LASO model. *Intl Jnl of Educational Mgt, 21*(3), 238-253. 10.1108/09513540710738683
41. Warford, M. K. (2005). Testing a diffusion of innovations in education model (DIEM). *The Public Sector Innovation Journal, 10*(3), 1-41.
42. Zolait, A. H. S. (2014). Innovation acceptance research: A review of theories, contexts, and approaches. *Journal of Internet Banking and Commerce, 19*(3), 2-18.

KNOWLEDGE MANAGEMENT OF INTELLIGENT ORGANIZATIONS IN TURBULENT ENVIRONMENT

Piotr Adamczewski
WSB University in Poznan, Poland
adamczewski@wsb.poznan.pl

ABSTRACT

The global economy evolves into a "knowledge-based economy", where market success of enterprises more and more depends on efficient knowledge management, that is on acquisition, generation, distribution and application of knowledge within organizations. The strategically important nature of knowledge results firstly from the fact that it is harder to imitate and substitute when compared with material resources, and secondly from the fact that it is more flexible, i.e. more useful for the creation or improvement of various elements of the enterprise's offer. Knowledge is currently perceived as a strategic enterprise resource and as such it should be subject to constant identification, measurement, acquisition, development, utilization and protection. Business in the 21st century is being redefined by a data-driven revolution. Small and medium enterprises (SMEs) play an essential role in the global economic growth. The share of the Polish SME sector in GNP has been at 48% for years now. This sector has been also among the most dynamically developing and computerising areas in the Polish economy. ICT (Information and Communication Technology) systems create the foundation of modern economic organizations in the times of digital transformation. This applies in particular to advanced ICT infrastructure, which is the condition sine qua non for the effective knowledge management. The objective of this article is to discuss organizational and technological aspects within the modern knowledge management using ICT called SMAC (Social, Mobility, Analytics, Cloud), being at present the canon of ICT support in this respect. The analysis has been illustrated with findings of research carried out by the author in 2014-17 in selected SMEs from Mazowieckie and Wielkopolskie provinces in Poland.
Keywords: ICT, intelligent organization, SMAC, knowledge management, SME

1. INTRODUCTION

Information and communication technologies (ICT) are claimed to be one of most important factors that shape today economic. These cutting-edge technologies are important for many reasons, as well as their spread and deployment by societies is predetermined by multiple factors, which are often even hard to identify and quantify. ICT are argued to be pervasive technologies meaning that their wide adoption profoundly reshaped the present state of the art (Lechman, 2018, p. 78). This pervasiveness also means that new technological solutions are thoroughly implemented and all society members gradually get accustomed to their every-day usage, that their implementation involves an ongoing socio-economic process, while the effects of technology adoption are usually indirect and characterized by significant time-lags. More often the socio-economic impact of technology is put in a complex context involving not only time but also a wide bundle of social norms and attitudes, political regimes, legal and institutional frameworks as well as geographical location or country`s historical legacy. Undeniably, ICT are one of the most important drivers of globalization, as these unique technologies allow for unrestricted flows of information and knowledge. The physical distance among agents does not hinder contacts any more as ICT enable social and economic interactions without physical contact. ICT has brought socio-economic transformation that is freeing people them from spatial and temporal context. The dynamics of market changes and the high level of turbulence in business environment make modern economic organizations face the challenge of continuous improvement in their operational methods and development.

In practice, it implies the necessity to use modern ICT solutions in knowledge management, which enable to support business processes within the acquisition and reinforcement of business's competitive advantages. Within the evolution of the information society towards the knowledge society, it boils down to the treatment of modern organizations as intelligent organizations. A intelligent organization is one whose business philosophy is based on knowledge management (Waltz, 2003, p 98). This term became popular in the 1990s owing to the growing ICT development, the dynamically changing economic environment, and the increasing market competitiveness. An intelligent organization is one that learns and has the capacity to create, acquire, organise, and share knowledge and use it in order to raise the efficiency of its operation and increase competitiveness on the global market. The idea of such an organization is based on the systemic approach to organization, i.e. its treatment as a complex organism founded on existing structures and executed processes, focusing on the role of knowledge. In that approach, which is called 'the fifth discipline' by P. Senge, owing to knowledge and suitable tools all elements of an organization and its personnel can collaborate in order to achieve set objectives (Waltz, 2003, p. 44). Thanks to that, the whole organization operates as an intelligent and successful organism in the competitive environment. This explains the mutual relationships between methods of fulfilling targets, their understanding, methods of solving problems as well as internal and external communication. This article is aimed at presenting the latest condition of digitalization and development tendencies in supporting the SME sector with SMAC solutions (Social, Mobility, Analytics, and Cloud), which is a sine qua non condition of enterprises from this sector to operate in a modern way and to take part in the process of digital transformation. According to research by Cisco Global Cloud Index, half of the global population will have access to the Internet in 2018, and more than 53% of them will use tools for storing data in the cloud (Cisco, 2016, p. 55). ICT implementation in every organization depends on numerous factors, mostly organizational, human, and technical, but also on the needs of the management, which can be more or less conscious. Unlike large organizations, where the implementation of advanced SMAC is perceived positively, it seems that an opposite approach can occur to this trend in the SME sector. Hence, the objective of the research has been defined to test the readiness of Polish SMEs to implement and use systems within the so-called 3rd ICT platform. In order to fulfil the objective, the following research hypotheses have been formulated:

- elements of SMAC solutions are used on an increasing scale in SMEs,
- SME management pay growing attention to the implementation of SMAC systems.

The analyses are illustrated with survey results and direct observations of the author from 2014-2017 in selected 120 SMEs from Mazowieckie and Wielkopolskie provinces, Poland, with reference to the general development trends in the studied area. The survey sample was made up of micro (9%), small (56%) and medium sized enterprises (35%). Surveyed companies represent a wide range of industries: retail and wholesale trade, discrete and process manufacturing, transport, HoReCa, utilities, finance, construction, telecommunication and ICT.

2. INTELLIGENT ORGANIZATION
The most important characteristics of a intelligent organization include, among other (Grösser, 2012, p. 34; Schwaninger, 2010, p. 45):
- fast and flexible operation,
- the ability to monitor the environment,
- the capacity to diagnose early market signals and to react to changes in the environment, and
- the ability to implement new knowledge-based solutions and achieve economic benefits therefrom.

The growing volume of information used in a intelligent organization is accompanied by its increasing importance. Peter Drucker indicated already that traditional factors of production, such as growth, labour, and capital, are losing their importance in favour of a key resource, namely knowledge applied in the creative operation of an organization. It constitutes intangible resources that are related to human actions, whose use may be the basis for gaining a competitive advantage (Schwaninger, 2010, p. 60). Knowledge has to be treated as information embedded in the context of an organization and a skill to use it effectively in the organizational activity. It means that knowledge resources are data about its customers, products, processes, environment, etc. in a formalised form (documents, databases) and in non-codified forms (knowledge of staff). In the practical dimension, the effective collaboration of such elements means the necessity to use advanced ICT solutions. Technical, technological, and organizational innovations, which have appeared in recent years, are all utilised (Adamczewski, 2017b, p. 59). They encompass almost all areas of a modern organization operation, starting from means of transport and equipment, through organization and material and raw material flow management, to the development of system structures that implement business processes, i.e. within logistics systems that are the essence of modern management based on ICT solutions (Adamczewski, 2017a, p. 61).

3. DIGITAL TRANSFORMATION IN INTELLIGENT ORGANIZATIONS

The present effect of the ICT evolution in the form of the so-called third ICT platform, has been treated since 2013 as the foundation of the 4th industrial revolution, being the natural development stage of the 3rd revolution of 1969 (its symbol being electronics with its transistor and automated production). The main distinguishing element of new changes has become the redefinition of the present course of business processes that contributes to new operating models of economic organizations facing new challenges to maintain their position and expand on the market further. The industrial revolution of the 4th stage is breaking out due to (Adamczewski, 2016, p. 199; McConnell, 2017, p. 55, Report, 2016, p. 66):

- the introduction of the all-present digitalization,
- decision processes based on virtual simulations and data processing in real time, and
- machine-machine and machine-man communication.

The digital transformation means a change of the present approach to a customer and a comprehensive process where an organization moves to new methods of operation using the state-of-the-art SMAC digital technology, including social media, mobility, big-data – analytics, and cloud computing. However, it has to be kept in mind that the role of digital technologies in that process is to enable the necessary changes and open an organization to new opportunities. Therefore, they should be a tool rather than the aim of transformation. The centre of the process has to be the customer and his needs, as the main driver for manufacturers and service providers. The digital transformation is no longer the method of gaining a competitive advantage – it is becoming a factor that enables to stay on the market. Today, it is difficult to find an economic sector that would be isolated from what is happening in the area of ICT solutions. Within several years, Airbnb, a company with no hotels at all, and in fact operating based on an algorithm of room rental, has become one of the main players on the global hotel market. A similar role is being played by Uber on the taxi service market. Both organizations have made innovations of a digital disruption type, which have changed the previous business order, providing customers with new advantages. In most cases, technological innovations and solutions that change business models and operating conditions in individual enterprises and whole sectors come from outside. Therefore, the careful monitoring of what is happening in ICT is the requirement not only for ICT companies, banks or telecommunication firms, but primarily for all organizations that want to maintain their leading position on the market.

Almost one third of management boards in leading global organizations expect that their revenues in the following years will be threatened by so-called digital disruptions, i.e. phenomena of a sudden appearance of new technologies and business models that will affect the value of products and services provided by such organizations (Report, 2016, p. 73). It can be concluded that the world of business has become even more changeable, and primarily unforeseeable and complex. The concept of VUCA is often used to describe such phenomena (Marz, 2015, p. 49), namely:

- Volatility – in particular the dynamics of changes and their catalysts, which are not governed by any predictable patterns,
- Uncertainty – no predictability that certain events will take place and the low awareness and understanding of situations that occur,
- Complexity – complexity and correlation with the lack of systematic knowledge that would allow to plan actions in a reliable manner, and
- Ambiguity – ambiguity and the lack of explicit interpretation of phenomena with the risk of interpreting conditions and cause-and-effect relationships.

It means that in conditions of extreme competitiveness and the digital transformation, the previous methods of management are failing, as they have often been focused exclusively on providing stability and predictability. Advance ICT solutions for knowledge management provide assistance in this respect. Top 10 strategic technology trends include three groupings of complementary trends – Figure 1 (Gartner, 2017, p. 37):

- the intelligent theme explores how AI is seeping into virtually every existing technology and creating entirely new technology categories. The exploitation of AI will be a major battleground for technology providers through 2022. Using AI for well-scoped and targeted purposes delivers more flexible, insightful and increasingly autonomous systems.
- the digital theme focuses on blending the digital and physical worlds to create a natural and immersive, digitally enhanced experience. As the amount of data that things produce increases exponentially, compute power shifts to the edge to process stream data and send summary data to central systems. Digital trends, along with opportunities enabled by AI, are driving the next generation of digital business and the creation of digital business ecosystems.
- the mesh theme refers to exploiting connections between an expanding set of people and businesses — as well as devices, content and services — to deliver digital business outcomes. The mesh demands new capabilities that reduce friction, provide in-depth security and respond to events across these connections.

Figure following on the next page
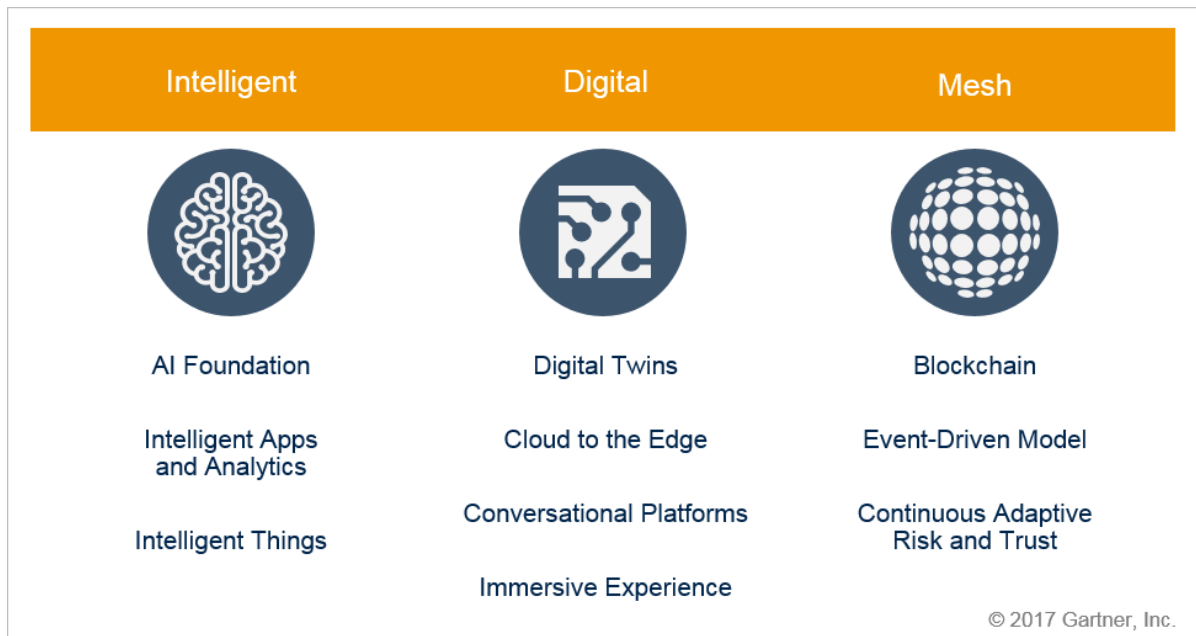
Figure 1. Top 10 Strategic Technology Trends for 2018 (Gartner, 2017, p. 37)

Elements of the digital transformation on intelligent organizations include (Beckford, 2016, p. 59; Cisco, 2016, p. 55; Perera, 2015, p. 83):
- SMAC technologies,
- IoT – Internet of Things,
- multi-channel models of product and service distribution, and
- automation and robotisation.

Such technologies determine changes in three areas of intelligent organizations that apply them through (Brunswicker, 2015, p. 69; Corcoran, 2016, p. 120; Marz, 2015, p. 89):
- developing relations with customers and counterparties owing to the deeper understanding of their needs, introducing numerous channels of communication, and enriching forms of self-service,
- improving operational processes within internal organizations and working environment as well as mechanisms of monitoring their efficiency, and
- modelling organizational operations within product manufacturing and services provided on the market.

4. ICT ECOSYSTEM IN A INTELLIGENT ORGANIZATION

An intelligent organization, as an economic system that uses advanced ICT infrastructure in its internal organization and communication, including external communication, constitutes the essence of information society operation in business areas at present. In practice, it means that ICT supports basic organizational structures and the application of the now economy concept in the on-line mode with (Adamczewski, 2017a, p. 403):
- the level of technical infrastructure (hardware),
- the level of system-communication infrastructure,
- the level of application software, and
- the level of integrating business processes with external counterparties.

The dynamic development of ICT has led to the development of a new technological standard, namely SMAC systems, which enable to introduce new business models. They are based on four pillars:

1. Social – social networks are breaking barriers in information flow among people and are becoming platforms where the fast exchange of knowledge is becoming increasingly effective. Communication within social platforms is strongly replacing telephone or e-mail communication. This phenomenon is taking place in businesses as well, where the fast information exchange is of great importance. The use of social networks makes it possible to obtain a better customer interaction and, as a consequence, it becomes possible to react faster to problems and build a knowledge base according to preferences and behaviour of users.

2. Mobile – mobile devices, such as smartphones, tablets, and notebooks, have become a basic working tool of a modern worker. They have also enhanced the opportunities to reach customers who use mobile phones and have become accustomed to e-shopping and using different types of services and applications anytime and anywhere. The growing popularity of mobile shopping has also forced enterprises to develop their online marketing and to provide customers with mobile channels. In such conditions, the presentation of an offer on mobile devices is the first step in achieving and maintaining a high position on the market.

3. Analytics – understanding the behaviour and preferences of customers is one of the greatest advantages of using analytics. By using collected data that is analysed with advanced algorithms, entrepreneurs can deduce how to earn loyalty from their customers, improve marketing campaigns, enhance product development processes, and render services that meet the preferences and requirements of customers. By learning tastes of their users, entrepreneurs can present content according to their expectations. The ultimate aim in using analytics in business is, therefore, taking right decisions based on updated and segregated information.

4. Cloud – the technology of a computing cloud offers tools that enable to collect and process data on network services effectively, which contributes to the efficient organization management. By using tools available in a cloud, it is possible to reduce operating costs of ICT systems, break down geographic barriers, and obtain access to data at any time and place. A cloud is a factor that puts other elements of the SMAC solution together.

There are numerous examples in the business practice proving that expectations and actual benefits from using ICT solutions do not tally. The cause of such an effect may be the shortage of the sufficient integration between implemented systems. A key to success in using the SMAC technology is to combine the four above-mentioned technologies, which communicate among themselves, and to enable a synergy effect. None of the four technologies alone can give a full effect. Only synergy generated by all SMAC elements working together makes it possible to create a competitive advantage. So far, organizations have invested in mobility, cloud, business analytics, and using social media in business by creating independent, usually unintegrated solutions. Their combination within the third ICT platform allows to create new revenue-generating services, deepen relationships with customers, and improve the efficiency of organizational operation (Adamczewski, 2016, p. 205). By developing a computing cloud and mobility, it has been possible to move from closed communication systems to social platforms (Beckford, 2016, p. 79; Denecken, 2015, p. 123). As a consequence, the working system and business communication have changed deeply and permanently. Social channels have made it possible to create and provide access to content, the broader distribution of information, as well as the better cooperation and interaction with customers. Mobile technologies have provided easy access to information through the non-stop Internet connection. Data analyses are used to optimise the management of customer relationships and improve the efficiency of sales

channels. Finally, a cloud is in many enterprises a foundation of their ICT systems, improving their flexibility and scalability, while reducing costs of data processing at the same time. Organizations that want to maintain their position on a competitive market have to be ready to provide their customers with services that are fully customised. Owing to the SMAC development, IT is no longer only the support in business development, but rather a turning point that gives an advantage to organizations and enables them to stand out against their competitors. SMAC provides required information on time, which makes it possible to take good decisions and to collaborate effectively both inside and outside an organization, i.e. in the whole cooperation chain.

5. KNOWLEDGE MANAGEMENT OF POLISH SMEs

The unique ICT ecosystem of an intelligent organization is usually based on advanced ERP solutions (Enterprise Resource Planning). ERP systems in their traditional function as solutions that integrate an information infrastructure in an organization are no longer sufficient. Their basic functionality has been enriched with Customer Relationship Management (CRM), Supplier Relationship Management (SRM), Supply Chain Management (SCM), and Product Lifecycle Management (PLM). Owing to their properties, SMAC systems enable to raise the efficiency of information services in business processes and, finally, to achieve higher market competitiveness. A conclusion can be ventured that such solutions are no longer a way of gaining a competitive advantage for organizations, but have become a factor that determines their survival on the global market (Adamczewski 2016, p. 204). According to IDC forecasts, in the next two years 80% of global organizations will initiate projects of digital transformation in their knowledge management, to be based on SMAC systems, including as many as 50% of outlays spent on the 3rd ICT platform solutions (Brunswicker, 2015, p 129; Report, 2016, p. 69). Research carried out by the author[1] shows that the popularity of IT support in management processes in SMEs can be presented as follows (percentage of analysed enterprises):

- finance and accounting – 87%,
- human resources – 75%,
- warehouse management – 63%
- production management – 21%,
- customer relationship management – 52%,
- office work support – 96% (including e-mail 98%), and
- procurement and sale process service – 64%.

The analysed enterprises use laptops and PCs in their day-to-day operations (99% of indications). On average, they hold about 15 computers. The vast majority use both land lines and smartphones. Tablets are used in every third enterprise (36%), with 4 tablets per firm on average. The above-mentioned statistics are supplemented with the 48% ratio of using online messenger systems and taking advantage of the support provided by ICT freelancers at 59%. SMEs usually do not use multi-layer data processing protections. Instead, they choose only basic anti-virus software (90%). Every second enterprise (53%) protects its data with a standardised policy of passwords that are set and managed by the management. On the other hand, less than half SMEs (48%) encode their e-mails. Only one out of three firms uses data backup (35%), including as many as 88% having that process automated. Interestingly, backup is used to secure company data more often by entities that do not consider their ICT security to be of essential importance for their business.

---

[1] The research was conducted in 2014-17 on a selected sample of 120 enterprises from the SME sector in Mazowieckie and Wielkopolskie provinces in Poland.

The readiness of the studied entities to face the challenges of digital transformation is as follows:
- 22% of respondents answered positively, confirming the implementation of such tasks,
- 12% of respondents answered that such actions would be taken soon,
- 20% of responses indicated that such actions would be taken in the near future, and
- according to 46% of respondents such actions were not being conducted and there were no such plans.

As regards the use of SMAC solutions, the statistics of the analysed entities reflect the general global trend in this respect, i.e. (Report, 2016, p. 97):
- a cloud is used in 18% organizations (38% of analysed population plans to start using it),
- mobility is utilised in 29% of organizations (with 15% of analysed population planning to launch it),
- analytics is applied by 9% of organizations (while 16% of studied population have plans to start it), and
- social media are declared by as many as 45% of organizations already, and their use in the near future is declared by 55% of respondents.

The development trends of Polish intelligent organizations in the digital transformation is supplemented with the following declared initiatives (Adamczewski, 2018, p. 10):
- office digitalization – 70%,
- modernization of ICT infrastructure – 64%,
- consolidation in ICT and advanced analytics – 49%,
- new mobile applications for personnel – 49%,
- networking – 49%, and
- mobile self-service applications for customers – 30%.

The fact of placing a customer in the centre was confirmed by responses about catching up with the dynamically evolving needs of contemporary consumers. Moreover, half of the respondents indicated the necessity to follow the changing expectations of their customers, declaring it to be their top business priority. The continuous improvement of customer satisfaction level is possible mostly owing to investments in new ICT solutions. Only owing to them shopping can be comfortable, fast, and possible at any time and place, while customer service can be effective. It also means the new opportunities in acquiring knowledge about needs, behaviour, and opinions of customers. In general, the above-mentioned study results show that Polish modern business organizations are becoming more confident in using advanced solutions of SMAC systems, to meet the challenges of digital transformation (Brunswicker, 2015, p. 66).
The growing demands of intelligent organizations within the ICT support for knowledge management result in general from their operation in real-time (RTE – *Real Time Enterprise*). Therefore, SMAC systems enable to raise the efficiency of management to a higher level by:
- reaching customers more effectively with mobile solutions,
- understanding customer needs better by using advanced analytics,
- communicating with customers more effectively via social media, and
- reducing data processing costs with cloud computing solutions.

6. CONCLUSION
Digital transformation requires not just the adoption of digital tools, but a complete change of mindset throughout the organization. Employees need to approach problems differently, communicate and collaborate differently, and measure success differently.

Ultimately, an organization's operations, revenue model, and organizational structure will change. And to add to the complexity, digital transformation will look different for every organization. Consequently, change management models are becoming an increasingly popular tool to help navigate and indeed drive the success of digital transformation projects. An active sector of SMEs in Poland is a prerequisite of a properly functioning market economy. This sector encompasses various enterprises. The dynamic economic changes and the evolution of business relationships devaluate traditional sources of competitive advantages in the SME sector, such as capital, infrastructure, access to outlets, and the quality of offered products and services. Modern enterprises that want to compete on the market effectively have to give priority to flexibility of their organization and its ability to implement innovative business models and reorganise logistics processes. Examples of numerous Polish SMEs show that the vision of a business managed in a modern way has come into the dynamic phase of realization, while the effective knowledge management with advanced ICT solutions is growing to the role of paradigm. There is no doubt that reserves still present in the SME sector can be utilised, through supporting its operation with advanced ICT systems with the dominant role of SMAC solutions. Statistics from the last years unequivocally confirm growing indicators of ICT solutions implementation in the sector of SMEs, which gives fair promise to Polish enterprises for their operations on global markets. Conducted research has confirmed research hypotheses. It shows that SMAC solutions are more and more common among small and medium enterprises while company management of the surveyed enterprises pays more and more attention to applying knowledge management systems. This stems from the conviction that in the times of digital transformation information technologies which support effective knowledge management not only allow to keep up with the rising competition but are an indispensable condition of market survival. Nevertheless, it has to be remembered that the creation and development of such smart technologies has one basic aim for businesses, namely to accelerate the development pace and improve the quality of offered products and services, while reducing operating costs. Although it seems apparently simple, paradoxically innovation of Polish business organizations from the SME sector is burdened with the concern about the unknown. SMEs are afraid of investing in solutions that are not popular yet. Nevertheless, the strategic vision of the management in such organizations will determine the directions and pace of popularising modern and effective solutions in knowledge management, which may contribute to the improvement of their competitiveness on the global market.

LITERATURE:
1. Adamczewski, P. (2018), *The Process of Digital Maturing on Intelligent Organizations*, [in]: Scientific Challenges, Economic and Legal Challenges 2018, Vol. 1, National Academy of Scientific Development, Lvov, p. 7- 13.
2. Adamczewski, P. (2017a), *E-logistics as the ICT Support in Modern Polish Organizations*, Chinese Business Review, Vol. 16, No. 8, pp. 391-410.
3. Adamczewski P. (2017b), *Knowledge Management in Intelligent Organizations in the Times of the Digital Transformation — Findings of the Research on the Polish SME Sector*, Research Journal. Vol. 75, No. 4, The WSB University Press in Poznań, pp. 53-68.
4. Adamczewski, P. (2016), *ICT Solutions in Intelligent Organizations as Challenges in a Knowledge Economy*, "Management", Vol. 20, No. 2, pp. 197-208.
5. Beckford J. (2016), *The Intelligent Organization. Realising the Value of Information*, Routledge – Taylor & Francis Group, London – New York.
6. Brunswicker, S., Vanhaverbeke W. (2015), *Open Innovation is Small and Medium-sized Enterprises (SME's): External Knowledge Sourcing Strategies and Internal Organizational Facilities*, "Journal of Small Business Management", Vol. 54, Iss. 4, pp. 1264-1288.
7. *Cisco Global Cloud Index 2013-2018* (2016), Cisco Systems Inc., San Jose.

8. Corcoran, P., Datta S. K. (2016), *Mobile-edge Computing and the Internet of Things for Consumers: Extending Cloud Computing and Services to the Edge of the Network*, IEEE Consumer Electronic Magazine, vol. 5, no. 4, pp. 73–74.

9. Denecken, S. (2015), *Conquering Disruption Through Digital Transformation*, SAP White Paper, New York.

10. Gartner Group (2017), *Top 10 Strategic Technology Trends for 2018*, New York.

11. Grösser, S.N., Zeier, R. (2012), *Systematic Management for Intelligent Organizations*, Springer-Verlag, Berlin Heidelberg.

12. Lechman, E. (2018*), The Diffusion of ICT*, Routledge – Taylor & Francis Group, London – New York.

13. Marz, N. (2015), Warren J., *Big Data*, Manningan Publications Co., New York.

14. McConnell, J. (2017), *The Organization in the Digital Age*, New York.

15. Perera, Ch., Ranjan, R., Wang, L., Khan S., Zomaya A. (2015), *Privacy of Big Data in the Internet of Things Era*, IEEE IT Professional Magazine, PrePrint (Internet of Anything). Retrieved 1 February.

16. Report IDC FutureScape *"Worldwide IT Industry 2016 Predictions: Leading Digital Transformation to Scale"* (2016), New York.

17. Schwaninger, M. (2010), *Intelligent Organizations. Powerful Models for Systematic Management*, Springer-Verlag, Berlin Heidelberg.

18. Waltz, E. (2003), *Knowledge Management in the Intelligence Enterprise*, Arteh House, Boston.

THE PERSPECTIVES OF DEMOGRAPHIC CHANGES IN THE CZECH LABOUR MARKET REGARDING EMPLOYEES 50+

Jiri Cerny
Faculty of Business and Economics, MENDELU Brno, Czech Republic
xcerny10@mendelu.cz

ABSTRACT
The demographic changes are a long-term process that has been shaping functioning of society. The study was set into the context of a Czech labour market. The paper presents results of research in which were examined data from various sources (i.e., Czech Statistical Office, Survey of Health, Aging, and Retirement in Europe, etc.) to suggest a model of the future structure of Czech labour market. The output was also compared at the European level. The findings of the study suggest recommendations for the further direction of research of retirement timing.
Keywords: *Age management, demographic trends, retirement timing*

1. INTRODUCTION
The environment in which we live is shaped by a variety of aspects. Sociologists explain this as a social fact that is defined by social structures, cultural norms and values of the external environment (Farganis, 2000). These factors are fundamentally influenced by the social and cultural conditions in within we live. The society is therefore defined by its individuals, who determine its functioning (Van Der Zee, 2014). It is the same for the labor market, which is formed on one side by employers who create a product or service, and on the opposite employees who provide labor factor (Hořejší, 2010). Together in the labor market, both sides are looking for the optimum in which they are willing to supply or demand a labor factor. General economics uses the employee's free time to explain the relationship and patterns. In the social context, however, it must be emphasized that the labor market is fundamentally influenced by its structure - by the people. Thus, the relationship between population development and overall societal development has been confirmed (Wei, 2012). The labor market is therefore directly influenced by the age structure of the population, by education, by the needs and values related to workers' lives, etc. (Workforce of the future, 2017). Society as a whole experiences constant changes that affect its functioning (Economist Intelligence Unit, 2011) and is also influenced both by internal and external factors. Aforementioned influence can be understood on many levels. For the purposes of this work, the structure of the population will be recognized in particular in association to the labor market and related social and economic factors. This research aims to define the threats and opportunities on the labor market in the Czech Republic, that arise in association with the demographic changes, in order to create a basis for modeling the planning of retirement timing.

2. METHODOLOGY
For this work, the data available at the Czech Statistical Office, the Survey of Health, Aging and Retirement in Europe (SHARE, 6th wave) database, the Population Reference Bureau and Eurostat data were examined. This is an overview study on the development and status of the labor market structure in the Czech Republic.

3. RESULTS
The demographic perspective was divided into various areas to provide a complex overview of the topic.

3.1. Population structure

The following table shows the development of the population in the Czech Republic between 2000 and 2016. It also includes the gender and age structure. The total population in the Czech Republic grew by almost 3% between 2000 and 2015. This increase, compared with the predictions of Population Reference Bureau, is the opposite of what is expected across Europe (a population decline of 745 million to 736 in 2050).

Population Structure

Year	Population total	Sex		Sex [%]		Age (years)			Age (years) [%]			Average age
		Males	Females	Males	Females	0 - 14	15 - 64	65 - more	0 - 14	15 - 64	65 - more	
2000	10 266 546	4 996 731	5 269 815	48,7 %	51,3 %	1 664 434	7 179 109	1 423 003	16,2 %	69,9 %	13,9 %	38,8
2001	10 206 436	4 967 986	5 238 450	48,7 %	51,3 %	1 621 862	7 170 017	1 414 557	15,9 %	70,2 %	13,9 %	39,0
2002	10 203 269	4 966 706	5 236 563	48,7 %	51,3 %	1 589 766	7 195 541	1 417 962	15,6 %	70,5 %	13,9 %	39,3
2003	10 211 455	4 974 740	5 236 715	48,7 %	51,3 %	1 554 475	7 233 788	1 423 192	15,2 %	70,8 %	13,9 %	39,5
2004	10 220 577	4 980 913	5 239 664	48,7 %	51,3 %	1 526 946	7 259 001	1 434 630	14,9 %	71,0 %	14,0 %	39,8
2005	10 251 079	5 002 648	5 248 431	48,8 %	51,2 %	1 501 331	7 293 357	1 456 391	14,6 %	71,1 %	14,2 %	40,0
2006	10 287 189	5 026 184	5 261 005	48,9 %	51,1 %	1 479 514	7 325 238	1 482 437	14,4 %	71,2 %	14,4 %	40,2
2007	10 381 130	5 082 934	5 298 196	49,0 %	51,0 %	1 476 923	7 391 373	1 512 834	14,2 %	71,2 %	14,6 %	40,3
2008	10 467 542	5 136 377	5 331 165	49,1 %	50,9 %	1 480 007	7 431 383	1 556 152	14,1 %	71,0 %	14,9 %	40,5
2009	10 506 813	5 157 197	5 349 616	49,1 %	50,9 %	1 494 370	7 413 560	1 598 883	14,2 %	70,6 %	15,2 %	40,6
2010	10 532 770	5 168 799	5 363 971	49,1 %	50,9 %	1 518 142	7 378 802	1 635 826	14,4 %	70,1 %	15,5 %	40,8
2011	10 505 445	5 158 210	5 347 235	49,1 %	50,9 %	1 541 241	7 262 768	1 701 436	14,7 %	69,1 %	16,2 %	41,1
2012	10 516 125	5 164 349	5 351 776	49,1 %	50,9 %	1 560 296	7 188 211	1 767 618	14,8 %	68,4 %	16,8 %	41,3
2013	10 512 419	5 162 380	5 350 039	49,1 %	50,9 %	1 577 455	7 109 420	1 825 544	15,0 %	67,6 %	17,4 %	41,5
2014	10 538 275	5 176 927	5 361 348	49,1 %	50,9 %	1 601 045	7 056 824	1 880 406	15,2 %	67,0 %	17,8 %	41,7
2015	10 553 843	5 186 330	5 367 513	49,1 %	50,9 %	1 623 716	6 997 715	1 932 412	15,4 %	66,3 %	18,3 %	41,9

Table 1: Population structure (Český statistický úřad, 2018)

If we look more closely at the gender perspective, we find that the ratio of women to men is almost unchanged. Women are nearly 4% more in the population of the Czech Republic, but they are practically identical in both groups.
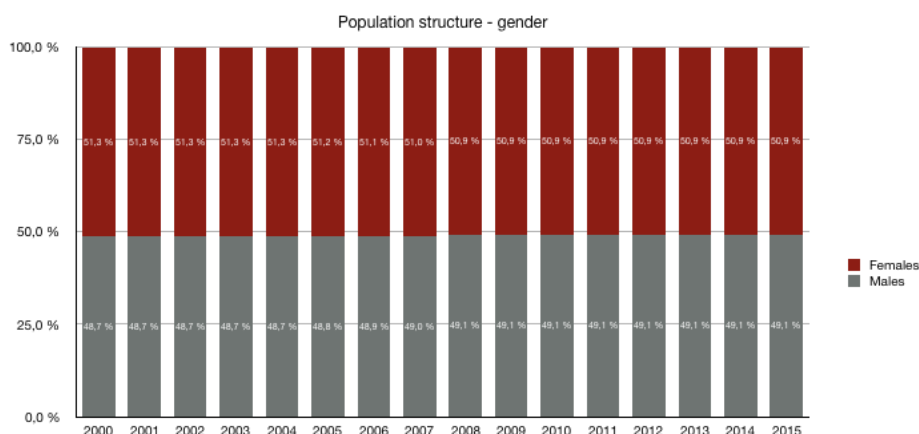
Figure 1: Population structure – gender (Český statistický úřad, 2018)

In the case of the age structure of the population between 2000 and 2015, we can see significantly more changes. As can be seen from the chart below, the age group 65+ is continually increasing. The representation of this age group increased by more than 30% in the chosen period. The year-on-year increase in age group 65+ is on average 6 percentage points. Another interesting point is that in 2006 the proportion of youth (0-14) vs. seniors (65+) reversed.

In this context, we can talk about the aging of the population, which is also confirmed by the development of the average age of the population, which grew by almost 8% to 41.9 years.
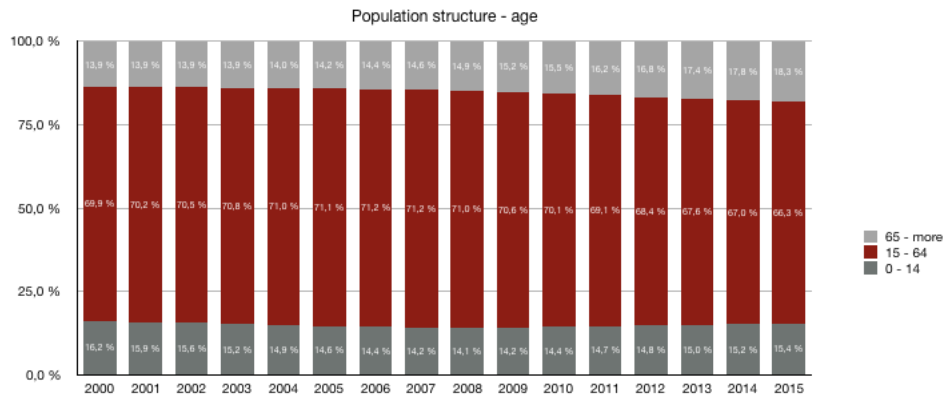

Figure 2: Population structure – age (Český statistický úřad, 2018)

The following table explains the reasons for the changes in the structure of the population. It captures births and deaths in individual years, as well as population changes as a result of migration.

Population and vital statistics - Czech Republic

Year	Mid-year population	Live births	Deaths	In-migrants	Out-migrants	Increase/decrease			Marriages	Divorces	Abortions
						natural	net migration	total			
1995	10 330 759	96 097	117 913	10 540	541	-21 816	9 999	-11 817	54 956	31 135	61 590
1996	10 315 353	90 446	112 782	10 857	728	-22 336	10 129	-12 207	53 896	33 113	59 962
1997	10 303 642	90 657	112 744	12 880	805	-22 087	12 075	-10 012	57 804	32 465	56 973
1998	10 294 943	90 535	109 527	10 729	1 241	-18 992	9 488	-9 504	55 027	32 363	55 654
1999	10 282 784	89 471	109 768	9 910	1 136	-20 297	8 774	-11 523	53 523	23 657	52 103
2000	10 272 503	90 910	109 001	7 802	1 263	-18 091	6 539	-11 552	55 321	29 704	47 370
2001	10 224 192	90 715	107 755	12 918	21 469	-17 040	-8 551	-25 591	52 374	31 586	45 057
2002	10 200 774	92 786	108 243	44 679	32 389	-15 457	12 290	-3 167	52 732	31 758	43 743
2003	10 201 651	93 685	111 288	60 015	34 226	-17 603	25 789	8 186	48 943	32 824	42 304
2004	10 206 923	97 664	107 177	53 453	34 818	-9 513	18 635	9 122	51 447	33 060	41 324
2005	10 234 092	102 211	107 938	60 294	24 065	-5 727	36 229	30 502	51 829	31 288	40 023
2006	10 266 646	105 831	104 441	68 183	33 463	1 390	34 720	36 110	52 860	31 415	39 959
2007	10 322 689	114 632	104 636	104 445	20 500	9 996	83 945	93 941	57 157	31 129	40 917
2008	10 429 692	119 570	104 948	77 817	6 027	14 622	71 790	86 412	52 457	31 300	41 446
2009	10 491 492	118 348	107 421	39 973	11 629	10 927	28 344	39 271	47 862	29 133	40 528
2010	10 517 247	117 153	106 844	30 515	14 867	10 309	15 648	25 957	46 746	30 783	39 273
2011	10 496 672	108 673	106 848	22 590	5 701	1 825	16 889	18 714	45 137	28 113	38 864
2012	10 509 286	108 576	108 189	30 298	20 005	387	10 293	10 680	45 206	26 402	37 733
2013	10 510 719	106 751	109 160	29 579	30 876	-2 409	-1 297	-3 706	43 499	27 895	37 687
2014	10 524 783	109 860	105 665	41 625	19 964	4 195	21 661	25 856	45 575	26 764	36 956
2015	10 542 942	110 764	111 173	34 922	18 945	-409	15 977	15 568	48 191	26 083	35 761
2016	10 565 284	112 663	107 750	37 503	17 439	4 913	20 064	24 977	50 768	24 996	35 921
2017	10 589 526	114 405	111 443	45 957	17 684	2 962	28 273	31 235	52 567	25 755	34 962

Table 2: Population and vital statistics (Český statistický úřad, 2018)

The figure below shows that in recent years there has been significantly higher population growth in the Czech Republic. However, this is not due to the higher number of births (as the natural process), but in particular, the migration process where the number of in-migrants exceeds the number of out-migrants. This process results not only into a change in the age structure of the population but also in the composition of nationalities.

By 2002, the Czech Republic was characterised by the decline in the population (mainly due to a negative natural increase in population). Until now, except 2013, it was possible to see positive population growth (essentially due to the entrance of people from abroad).
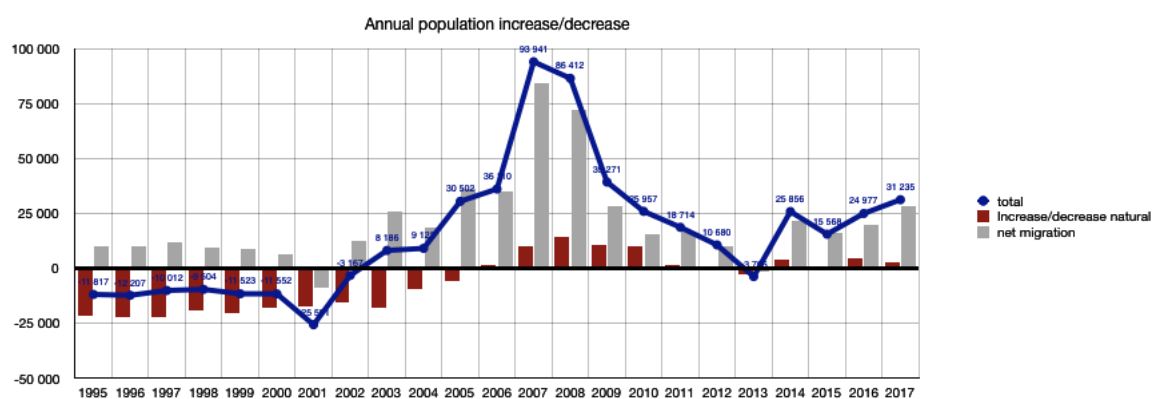

Figure 3: Annual population increase/decrease (Český statistický úřad, 2018)

3.2. Education

Related to the population development and age structure, it is also necessary to consider its education. The tables below illustrate the development of the number of students at each level of education (primary, secondary, tertiary).

Education Czech Republic - Education Level

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Primary	958 860	916 575	876 513	844 863	816 015	794 459	789 486	794 642	807 950	827 654	854 137	880 251	906 188
Secondary	579 505	577 605	576 585	569 267	564 326	556 260	532 918	501 220	470 754	448 792	435 542	427 107	424 849
Tertiary	265 005	289 729	316 524	344 434	368 683	389 683	396 679	392 700	381 477	368 293	347 434	327 007	311 824
TOTAL	1 803 370	1 783 909	1 769 622	1 758 564	1 749 024	1 740 402	1 719 083	1 688 562	1 660 181	1 644 739	1 637 113	1 634 365	1 642 861

Education Czech Republic - Education Level %

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Primary	53 %	51 %	50 %	48 %	47 %	46 %	46 %	47 %	49 %	50 %	52 %	54 %	55 %
Secondary	32 %	32 %	33 %	32 %	32 %	32 %	31 %	30 %	28 %	27 %	27 %	26 %	26 %
Tertiary	15 %	16 %	18 %	20 %	21 %	22 %	23 %	23 %	23 %	22 %	21 %	20 %	19 %
TOTAL	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %

Table 3: Education in the Czech Republic (Český statistický úřad, 2018)

As was mentioned in the previous chapter, the negative natural increase in the number of inhabitants in the Czech Republic is due to a lower birth rate than the deceased. This development results in fewer pupils at the primary level of education. E.g., a comparison of 2004 and 2010 shows that in 2010 there were more than 17% fewer pupils at the primary level of education. This results in the decrease of the number of students in secondary education, which is dropping throughout the whole reviewed period. From the perspective of the number of students at a tertiary level of education, we can observe the peak in 2010 and then its constant decline. The following graph draws the representation of specific levels of education, which confirms the fall in secondary students' representation.

Figure following on the next page
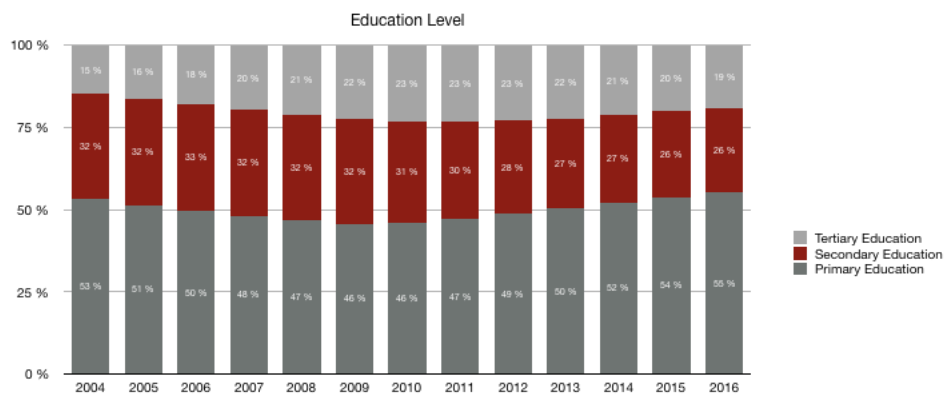
Figure 4: Education level (Český statistický úřad, 2018)

The figures also show a gradual decrease in the number of participants in the education process in the Czech Republic, which was almost 8% in the examined period.
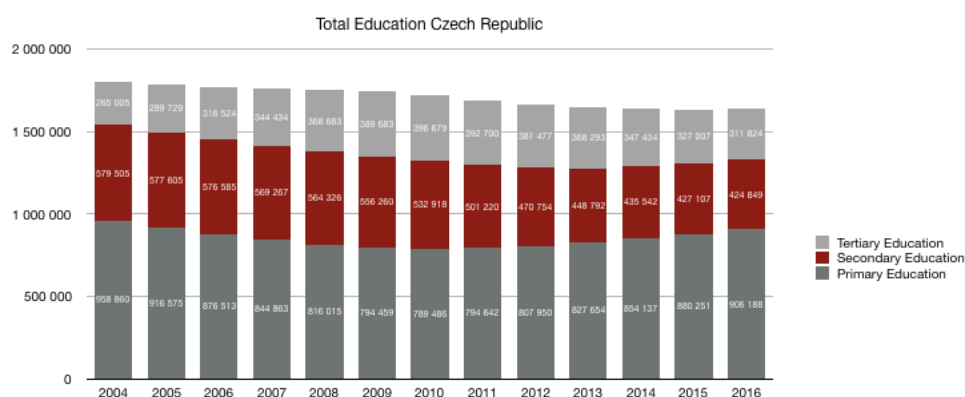
Figure 5: Total number of students in the Czech Republic (Český statistický úřad, 2018)

3.3. Life expectancy

Another important aspect related to the demographic development of the population is the prolonging lifespan, respectively increasing life expectancy. For the purpose of this study, attention was paid primarily to a higher age cohort (70-85 years). The following tables display the evolution of the probability of life expectancy in selected years. Also, a comparison was made between the years 1920 and 2016 - at least a 30% increase in life expectancy for men and at least 40% for women was recognized.

Table following on the next page

Life Expectancy - Males - Czech Republic

	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85
1920	47,0	54,5	50,5	46,2	42,5	39,0	35,3	31,6	27,8	24,0	20,4	17,0	13,8	10,9	8,4	6,4	4,7	3,4
1950	62,3	62,5	57,8	53,1	48,5	44,0	39,6	35,1	30,6	26,3	22,2	18,4	15,0	12,0	9,3	7,1	5,3	3,9
1970	66,1	62,9	58,0	53,2	48,5	43,9	39,3	34,7	30,1	25,7	21,5	17,7	14,1	11,1	8,6	6,6	5,1	3,8
1990	67,6	63,5	58,6	53,7	48,9	44,2	39,4	34,7	30,2	25,8	21,7	18,0	14,6	11,6	9,1	6,9	5,1	3,6
2000	71,6	67,1	62,1	57,2	52,4	47,6	42,9	38,1	33,4	28,9	24,7	20,7	17,0	13,7	10,8	8,2	6,1	4,4
2010	74,4	69,6	64,7	59,7	54,9	50,1	45,3	40,5	35,7	31,1	26,7	22,5	18,7	15,3	12,1	9,2	6,6	4,5
2016	76,2	71,5	66,5	61,6	56,7	51,9	47,0	42,2	37,5	32,8	28,2	23,9	19,9	16,3	13,1	10,2	7,7	5,7
1920-2016	62,0 %	31,3 %	31,7 %	33,3 %	33,4 %	33,0 %	33,1 %	33,6 %	34,8 %	36,3 %	38,3 %	40,7 %	44,2 %	49,3 %	55,0 %	60,4 %	63,4 %	65,5 %

Life Expectancy - Females - Czech Republic

	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85
1920	49,6	55,4	51,5	47,2	43,3	39,7	36,1	32,5	28,7	24,9	21,2	17,5	14,1	11,1	8,5	6,3	4,7	3,4
1950	67,0	66,5	61,8	57,0	52,3	47,6	43,0	38,4	33,9	29,4	25,1	20,8	16,9	13,2	10,0	7,4	5,3	3,7
1970	73,0	69,5	64,6	59,7	54,8	50,0	45,1	40,3	35,6	30,9	26,4	22,1	18,0	14,1	10,7	7,9	5,7	3,9
1990	75,4	71,2	66,3	61,3	56,4	51,6	46,6	41,8	37,0	32,3	27,8	23,3	19,1	15,2	11,8	8,7	6,3	4,3
2000	78,3	73,7	68,8	63,8	58,9	54,0	49,1	44,2	39,3	34,6	30,0	25,5	21,2	17,1	13,3	9,9	7,1	4,8
2010	80,6	75,8	70,9	65,9	61,0	56,1	51,1	46,2	41,3	36,6	31,9	27,3	22,9	18,7	14,8	11,1	7,9	5,3
2016	82,1	77,3	72,3	67,4	62,4	57,5	52,6	47,7	42,8	38,0	33,3	28,7	24,2	19,9	15,9	12,2	9,0	6,3
1920-2016	65,5 %	39,5 %	40,4 %	42,8 %	44,1 %	44,8 %	45,7 %	46,8 %	49,1 %	52,6 %	57,1 %	64,0 %	71,6 %	79,3 %	87,1 %	93,7 %	91,5 %	85,3 %

Table 4: Life expectancy based on gender (Český statistický úřad, 2018)

In the following figure, we can see how many times the life expectancy has changed regarding age and gender between 1920 and 2016 in the Czech Republic. As mentioned above, the increase in life expectancy is significantly higher for women than for men.
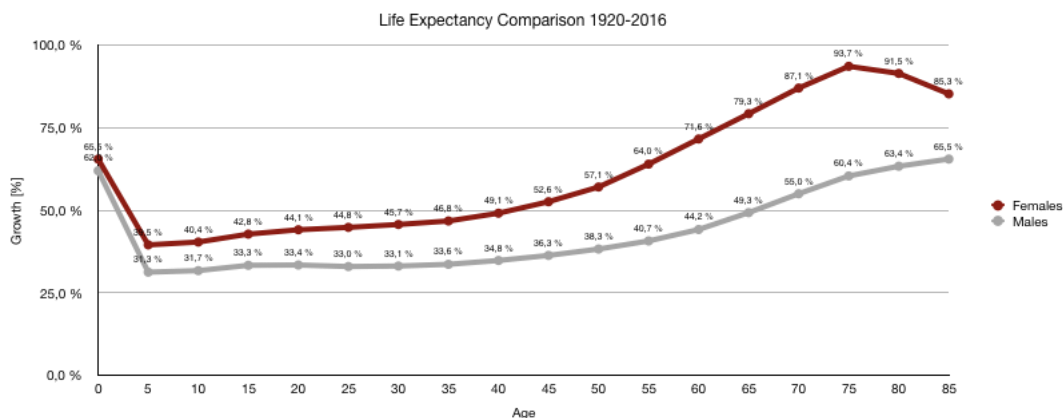
Figure 6: Life expectancy comparison 1920-2016 (Český statistický úřad, 2018)

It is evident that the expectation of survival of higher age is decreasing. The following charts in more detail capture the life expectancy of 65-85 years in selected years. The figure shows that the 85-year survival expectancy for men is 65% lower (68% for women) - yet the life expectancy of 85 years is 10.5% higher for women than men.

Figure following on the next page
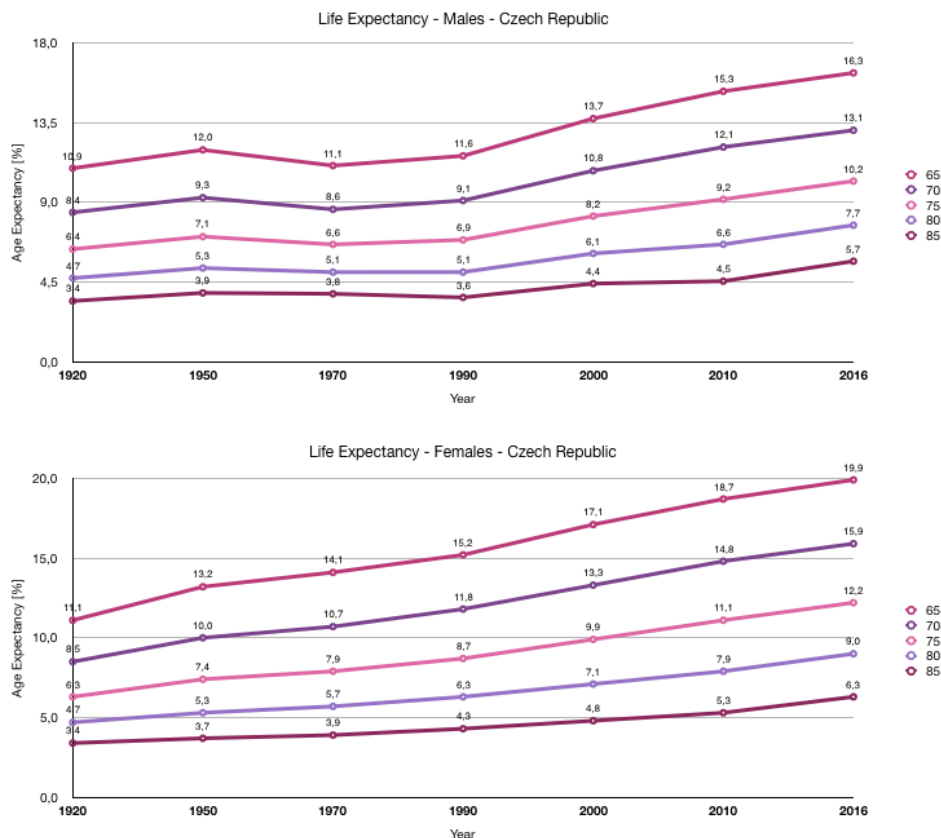
Figure 7: Life expectancy comparison 1920-2016 (Český statistický úřad, 2018)

Compared to 1920, a life expectancy of 85 years for women increased by more than 85% (68% for men). That means that life expectancy is growing faster for women than for men.
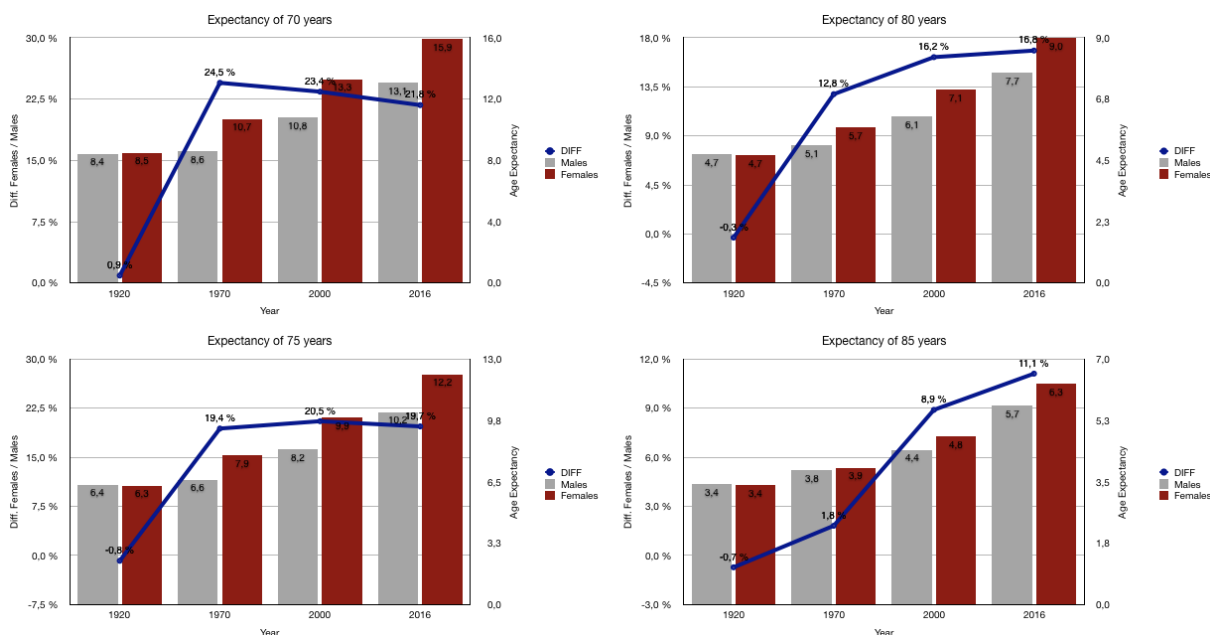
Figure 8: Life expectancy in detail (Český statistický úřad, 2018)

3.4. Pensioners

It was stated that it was recognized the increase in the representation of age group 65+ on the total population of the Czech Republic. This trend is illustrated below in more detail - by the number of pension recipients.

429

Pension Recipients

Year	Mid-year population	Pension recipients			
		Male	Female	Total	% of population
2006	10 266 646	622 154	797 865	1 420 019	13,83 %
2007	10 322 689	635 097	813 447	1 448 544	14,03 %
2008	10 429 692	656 951	827 584	1 484 535	14,23 %
2009	10 491 492	684 278	848 734	1 533 012	14,61 %
2010	10 517 247	749 291	898 243	1 647 534	15,67 %
2011	10 496 672	788 790	936 602	1 725 392	16,44 %
2012	10 509 286	793 481	933 042	1 726 523	16,43 %
2013	10 510 719	796 838	926 412	1 723 250	16,40 %
2014	10 524 783	808 944	935 265	1 744 209	16,57 %
2015	10 542 942	820 708	943 556	1 764 264	16,73 %
2016	10 565 284	837 109	951 076	1 788 185	16,93 %

Table 5: Pension recipients (Český statistický úřad, 2018)

It is noticeable that the rate of pension beneficiaries is rising in the total population - it increased by almost 26% between 2006-2016, and the growth rate can be expected to continue to grow. While in 2006 it was 13.83% of the population, it was 16.93% in 2016. The growth rate of pension beneficiaries was also faster than the overall population growth. It is also essential to emphasize that the positive population growth is caused mainly by in-migration in the context of the Czech Republic and not by higher birth rates than the deceased.
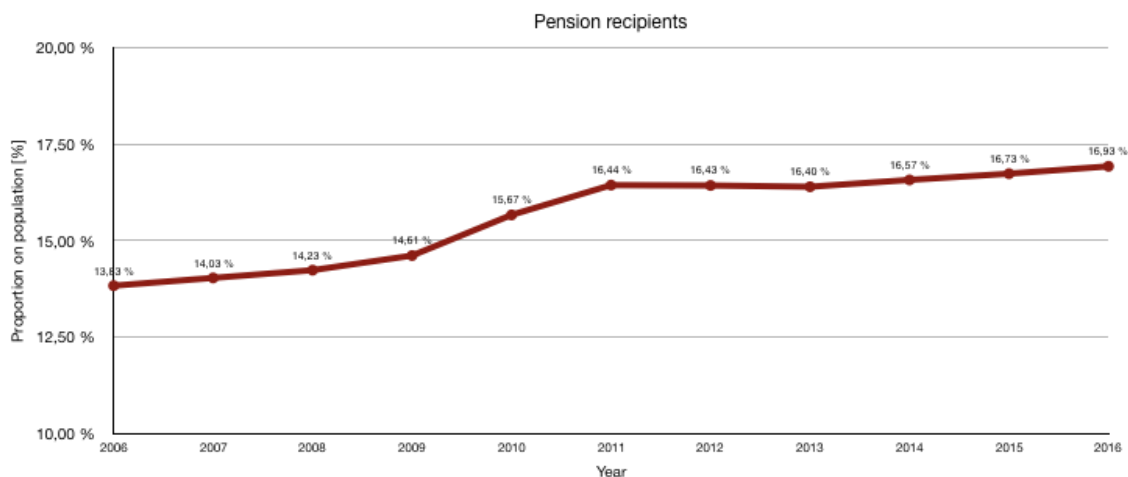

Figure 9: Pension recipients (Český statistický úřad, 2018)

Overall, there is also a higher number of women receiving pensions than men. In connection with the aforementioned prolonged life expectancy, it can also be claimed that women are longer-term beneficiaries than men.
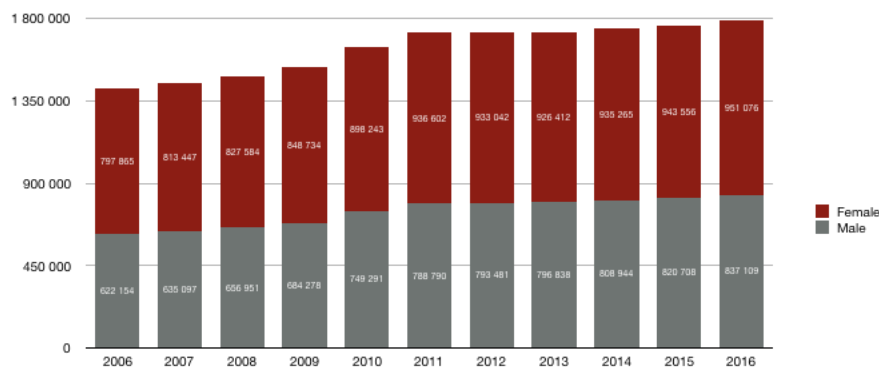

Figure 10: Pension recipients by gender (Český statistický úřad, 2018)

If the number of seniors increases, a rise in the demand for social care services for this age cohort can also be expected. This assumption was confirmed by data from the Czech Statistical Office. The figure below illustrates the development of the number of pensioners waiting for placement in the home for seniors. It is a growing trend. It is necessary to add to the data that in 2003 there was a change in the methodology of calculation (a division into sub-categories of social services). The almost linear course confirms the urgency of addressing the care toward an aging population.

Figure 11: Number of pensioners waiting for retirement home (Český statistický úřad, 2018)

3.5. Economic activity of seniors

In association with the aging population, it is also desirable to consider the potential economic activity of seniors in the labor market. The following table shows the results of the SHARE survey. It presents the percentage of the economically active seniors of the selected age group in the labor market. In the Czech Republic, in the age of 50-59, is almost 81% of the cohort economically active. However, the value (representation rate of economically active) dramatically decreases (8 times lower) after the 60th year of age. While in Sweden, for example, it is a 54% decrease (42% of the 60-69 age group is active in the labor market, compared to 10% in the Czech Republic - i.e., four times more seniors aged 60-69, are active in the Swedish labor market than in the Czech Republic). The purpose of interpreting these results is not to identify the exact factors influencing this evolvement but to inform about the situation. Based on previous studies, a particular combination of effects can be expected both on the individual and on the organizational side (opportunities and instruments of the labor market). However, it is reasonable to ask how this can be changed and how to increase the representation of seniors as the economically active part of the population.

Table following on the next page

Country	Year	Subgroup	percentage (%)	se	N
Czech Republic	2014	Age 50-59	80,69	3,33	874
		Age 60-69	10,62	0,83	1 925
		Age 70-79	0,62	0,20	1 370
		Age 80+	0,15	0,15	523
Germany	2014	Age 50-59	82,77	1,24	1 235
		Age 60-69	32,48	1,33	1 475
		Age 70-79	1,55	0,44	1 131
		Age 80+	0,32	0,23	402
Austria	2014	Age 50-59	72,42	2,25	586
		Age 60-69	10,77	1,18	1 198
		Age 70-79	0,34	0,17	1 062
		Age 80+	0,44	0,31	426
Sweden	2014	Age 50-59	93,01	1,33	468
		Age 60-69	41,96	1,39	1 463
		Age 70-79	2,84	0,52	1 273
		Age 80+	0,67	0,41	574

Table 6: Representation of various age cohorts on a labor market (SHARE, 2017)

3.6. Future insight

The following text is based on the predictions published by Dr. Burcin, which created a population prognosis illustrating the fundamental changes in the reproductive behavior of the population in the Czech Republic. As can be seen from the figure, since 1994 in the Czech Republic the annual number of deceased has exceeded the number of births. There are various reasons for the decline in birth rates - lower fertility rates for women in higher reproductive age, changes in value systems, etc. At the same time, it is possible to observe the continuous shift in life expectancy and mortality reduction.
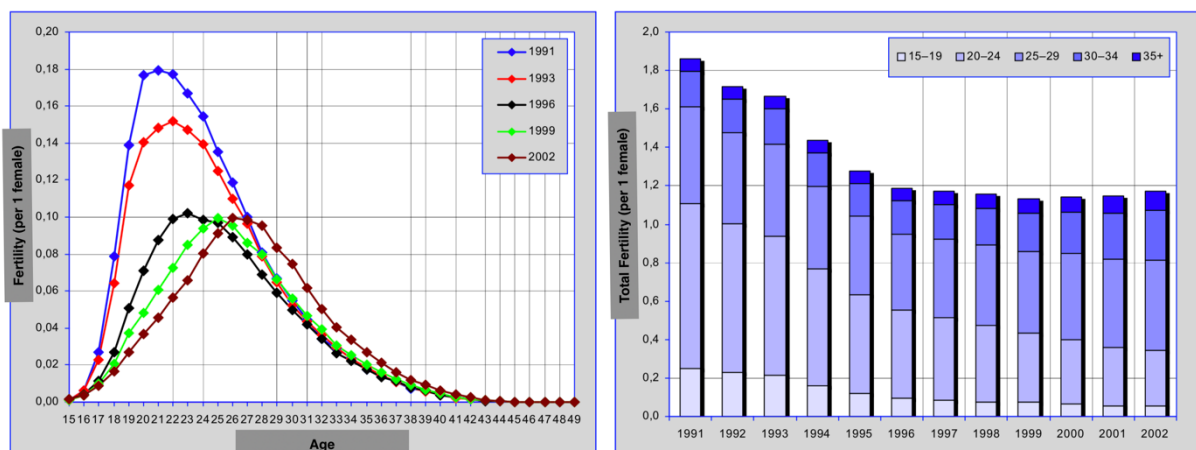
Figure 12: Fertility withing ages and years (Burcin, 2003)

The projected possible development of the life tree of the population in the Czech Republic is illustrated in the following figure. It demonstrates the repeatedly mentioned change in the structure of the population, which is one of the principal motivations of the author to study the issues of changes in the labor market and to contribute to new proposals for solving the future situation.
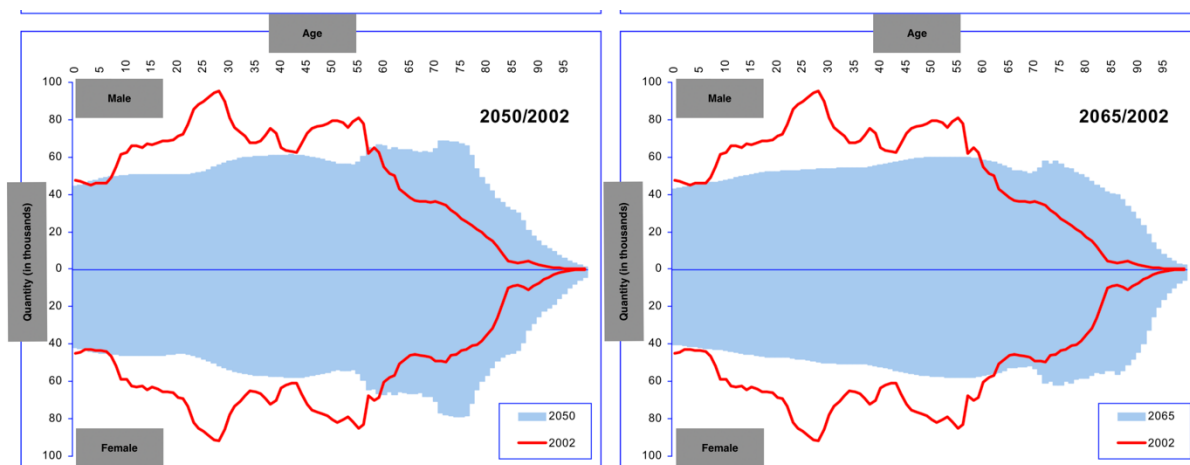
Figure 13: Life trees projection by gender (Burcin, 2003)

4. CONSLUSION

It is apparent from the above that the population in the Czech Republic undergoes significant changes regarding population aging. That has consequences and also effects on the structure of the labor market, whose functioning is fundamentally dependent on the structure of the population (Jackson, 2013). For these reasons, the urgency and significance of the following findings will be growing in the future:

- Positive population growth as a result of in-migration, which demands the awareness and adaptation of multicultural diversity at both social and organizational levels.
- Increasing life expectancy not only should not be understood solely in the context of lifespan but also regarding gender due to faster-growing life expectancy growth in women.
- A dramatic decline in the representation of economically active seniors after the age of 60 and the creation of conditions for extending the period of economic activity.
- Increasing numbers of applicants for social services related to the care of an aging population.
- The need for recognition of the aging and changes in the structure of the economically active population, regarding the construction of public budgets (on the revenue and expenditure side).
- The decline in the growth of younger workers on the labor market and the increase of older ones requires intervention at the organizational level, associated with Age Management.

LITERATURE:

1. BÖRSCH-SUPAN, A. (2017). Survey of Health, Ageing and Retirement in Europe (SHARE) Wave 6. Release version: 6.0.0. SHARE-ERIC. Data set. DOI: 10.6103/SHARE.w6.600
2. BURCIN, Boris, Tomáš KUČERA a spolupráce Dušan Drbohlav. Perspektivy populačního vývoje České Republiky na období 2003-2065. Praha: Nakl. DemoArt pro Přírodovědeckou fakultu Univerzity Karlovy v Praze, 2003. ISBN 80-867-4601-1.
3. Economist Intelligence Unit, A Silver Opportunity? Rising lovngevity and its implications for business. A report from the Economist Intelligence Unit Sponsored by AXA, 2011.
4. Employment Statistics. In: Eurostat Statistics Explained [online]. 2017 [Accessed: 2018-03-30]. Available at:
http://ec.europa.eu/eurostat/statistics-explained/index.php/Employment_statistics#Further_Eurostat_information

5. FARGANIS, James. Readings in social theory: the classic tradition to post-modernism. 3rd ed. Boston: McGraw-Hill, 2000. ISBN 00-723-0060-4.
6. HOŘEJŠÍ, Bronislava. Mikroekonomie. 5., aktualiz. vyd. Praha: Management Press, 2010. ISBN 978-807-2612-185.
7. JACKSON, Richard, Neil HOWE a AND TOBIAS PETER. The global aging preparedness index. Second edition. 2013. ISBN 978-144-2227-811.
8. Souhrnná data o České republice. Český statistický úřad [online]. 2017 [Accessed: 2018-03-30]. Available at: https://www.czso.cz/csu/czso/souhrnna_data_o_ceske_republice
9. VAN DER ZEE, K. and OTTEN, S. 2014. Organizational Perspectives on Diversity. In: S. Otten, K. van Safdar, S., M. B. Brewer (Eds.). Towards Inclusive Organizations. Determinants of successful diversity management at work. 1st Edition. London: Psychology Press.
10. WEI, L., and LAU, C. (2012). Effective teamwork at the top: The evidence from China. International Journal of Human Resource Management, 23(9).
11. Workforce of the future. London, 2017. Available at: https://www.pwc.com/gx/en/services/people-organisation/workforce-of-the-future/workforce-of-the-future-the-competing-forces-shaping-2030-pwc.pdf
12. World Population Data Sheet 2016. Population Reference Bureau [online]. 2016 [Accessed: 2018-03-30]. Available at: https://www.prb.org/2016-world-population-data-sheet/

LINEAR MODEL AS A TOOL IN THE PROCESS OF IMPROVING FINANCIAL HEALTH

Jarmila Horvathova
Faculty of Management, University of Prešov, Slovakia
jarmila.horvathova@unipo.sk

Martina Mokrisova
Faculty of Management, University of Prešov, Slovakia
martina.mokrisova@unipo.sk

ABSTRACT
The assumption of prosperity and competitiveness of a business is to ensure its financial health. Therefore, it is necessary to pay attention to the diagnosis of financial health of businesses and to identify early signs of their future problems. In relation to this need, a number of diagnostic models based on the application of financial indicators have been developed. The most used methods of today include discriminant analysis, logistic regression, decision trees as well as neural networks. However, these methods have limited processing capabilities in terms of the number of the data and database size. Therefore, new approaches arise. These methods eliminate the shortcomings of traditional approaches. Recently, an unusual method of addressing this issue has come into the forefront. Data Envelopment Analysis (DEA) is a non-parametric method that has a number of advantages compared to conventional methods of assessing financial health. The aim of the paper was to evaluate and predict the financial health of selected sample of Slovak businesses. To fulfil this aim we used DEA CCR model, which is based on solving a system of linear programming problems. We formulated dual linear programming model. With the use of this model we identified businesses which are financially healthy. We calculated also goal values of financial indicators for those businesses which did not reach the required financial health frontier. Achievement of these goal values is a precondition for ensuring competitiveness of analysed sample of businesses.
Keywords: Data Envelopment Analysis, Financial health, Innovative, Input, Method, Model, Output, Performance

1. INTRODUCTION
Data Envelopment Analysis (DEA) is one of the important tools of economic management. Compared to statistical and other methods, DEA is relatively new non-parametric method, which is one of the possible approaches to assessing the efficiency, performance, productivity and financial health of homogenous production units. Theory of DEA came into existence in 1970s. It was built on the idea of the paper „Measuring efficiency of decision making units" published by Farrel in 1957, whose work was based on the works of Debreu (1951) and Koopmans (1951). Farrel (1957) proposed a new efficiency measure based on the calculation of linear convex envelope curve and the use of distance functions to measure the distance of the business from the projected point on the effective curve. In this way, he proposed a new efficiency ratio based on the calculation of two components of overall business efficiency: technical and allocation efficiency. Farrel`s approach was based on measuring the ability of a business to transform inputs to outputs and therefore it is called input-oriented. This approach was later reformulated by Charnes, Cooper and Rhodes (1978) (DEA CCR), resp. Banker, Charnes and Cooper (1984) (DEA BCC). This method was further elaborated by authors Färe, Grosskopf and Lovell (1985).

2. LITERATURE REVIEW

The basic role of DEA models is to compare organizational units within a given group and to evaluate their efficiency. It is a method based on the use of linear programming originally developed to measure efficiency of non-profit institutions such as schools, hospitals, or state and public administration. Its use has later extended to various businesses, services, the banking sector and the performance of national economies. In order to enable DEA application in different areas, the term Decision Making Unit (DMU) was introduced. This term describes any entity (not only a business) in which the process of transforming inputs into outputs is in progress. In present the DEA model started to apply not only for the calculation and evaluation of business efficiency but also for the evaluation of business financial health (Mendelová, Bieliková, 2017). The rise of the use of DEA method to diagnose business financial health was caused by an intuitive relationship between inefficiency and failure of businesses. Financially healthy business is a business which is at the moment and also in the long-term able to fulfil the reason of its existence. In market economy it means to permanently achieve rate of return on invested capital which is sufficient for investors due to the level of risk in the sphere of business. Business financial health depends mainly on its performance and financial position. It also expresses the resistance of business finance against external and internal operational risks for the given financial situation. It is also a synthesis of Return on Equity, short-term liquidity, solvency and stability (Dluhošová, 2008). DEA is suitable for determining the technical efficiency of production units which are comparable to each other. It means that these production units use the same inputs to produce the same outputs. They differ in their performance, efficiency or financial health. We use DEA method to find out efficient and inefficient production units. In the case of inefficient production units, we can identify inputs which they need to reduce, or outputs which they need to improve. DEA models are based on the assumption that for a given problem there is production possibility frontier (PPF) formed by all possible combinations of inputs and outputs. PPF is determined by efficiency frontier. If the combination of inputs and outputs of the production unit lies on the frontier, it is efficient and financially healthy production unit which performance is high. If the production unit is inefficient, it does not lie on the PPF. This unit need to reduce inputs or increase outputs. We can find a solution applying DEA model. Basic DEA models include CCR models, also known as CRS (constant returns to scale) models, and BCC models. The difference between these models lies in the fact that CCR model assumes constant returns to scale and BCC model, which is its modification, takes into account variable returns to scale. In the case of these different models, efficiency frontier may have a different shape. If returns to scale are constant and production unit is efficient at a certain combination of inputs and outputs, than the production unit, which inputs and outputs are multiples of inputs and outputs of original production unit, is also efficient. If returns to scale are variable, the assumption of the same increase in output in case of increase in input does not apply. Production unit can be efficient also if increase in output is lower or higher than increase in input. All DEA models can be in terms of their calculation oriented on inputs (input-oriented) or outputs (output-oriented). In input-oriented models we measure business efficiency based on input variables (total assets, number of customers, operating costs, number of employees, cost, debt, etc.). If the optimal value of objective function is equal to „1", business is efficient within a given group and if the optimal value of objective function is less than „1", business is inefficient. This value than points to the need for a proportional reduction (improvement) of inputs in such a way that inefficient business (bank branch) becomes efficient. With the use of DEA models we are able to determine not only business efficiency but mainly we get information on how business should improve its activity to become efficient. On the other hand, in output-oriented models we determine business efficiency based on output variables (sales, production, profitability, liquidity, etc.). If the optimal value of objective function is equal to „1", business is efficient within a given group

and if the optimal value of objective function is higher than „1", business is inefficient. In output-oriented models an increase in some input variables or possibly increase in all input variables is considered as improvement of the activity of inefficient businesses. When applying DEA method as a forecasting technique, we can identify two concepts. These concepts differ especially in the area of identification of inputs and outputs. First one is based on traditional approach to PPF, which in terms of predicting financial health can be called financial health frontier, resp. success frontier. In predicting business financial distress, PPF consists of businesses which carry the lowest risk of bankruptcy compared to other businesses in a sample. Financial situation of businesses outside PPF is worse and they carry higher risk of problems. Outputs are defined as variables which contribute to business success and in terms of mathematical optimization are maximized (for example indicators of liquidity, profitability, etc.). Inputs are variables which increase the risk of bankruptcy and in terms of mathematical optimization are minimized (for example debt ratios, cost ratios, liability ratios, etc.). One of the main disadvantages of this approach is a sample of businesses, most of which are financially healthy. DEA in this approach is not able to definitely identify businesses in financial distress. Since it is not possible that all financially healthy businesses are on PPF, businesses threatened by financial distress can together with financially healthy businesses lie on production possibility set (PPS). Their differentiation from financially healthy businesses is not explicit. The second concept is less common and its understanding of PPF differs significantly from the first concept. In this case PPF can be called financial distress frontier, resp. failure frontier because it consists of businesses which bear the highest risk of financial distress. There are two approaches – negative and inverse DEA – which are used to select variables for the construction of financial distress frontier, resp. failure frontier. The inverse DEA involves swapping inputs and outputs of traditional DEA model. The aim of negative DEA is to put businesses in financial distress on the empirical financial distress frontier. When creating financial distress frontier of negative DEA, outputs are variables in which businesses in financial distress achieve higher values (for example debt ratios, cost ratios, liability ratios, etc.) and on the other hand inputs are variables in which businesses in financial distress achieve lower values (indicators of liquidity, profitability, etc.). The philosophy of negative DEA was introduced in the work of Paradi et al. (2004). Negative DEA applied Vavřina et al. (2013), classic and negative DEA applied Araghi and Makvandi (2012). Mendelová, Bieliková (2017) used negative DEA in the field of business financial health assessment. Based on these findings we decided to apply input and output oriented DEA CCR model in this paper. Then we compared the results of applied models and we processed the conclusions.

3. DATA AND METHODOLOGY

The research problem of the paper was focused on analysing and predicting the financial health of a production unit. To analyse financial health of a production unit, we used selected financial indicators and innovative approach to assessing financial health – DEA method. Formulation of the research problem: Is DEA a suitable alternative for measuring and predicting financial health of a production unit by a set of financial indicators? Are the results of input-oriented model the same as the results of output-oriented model? The aim of the research was to assess the possibility of applying this method to selected sample of production units and to identify production units that are financially healthy. Research sample consists of 30 Slovak production units doing a business in the field of heat supply. To solve the research problem and calculate performance of the analysed sample of businesses we used the data from the Register of financial statements (RÚZ, 2017). Analysed businesses are local central heat supply systems, which according to the classification of economic activities SK NACE belong to Steam delivery and cold air distribution.

To analyse financial health, we used financial indicators from the various areas of its assessment: Total Liquidity – TL, Current Liquidity - CL, Return on Assets – ROA, Return on Equity – ROE, Return on Sales – ROS, Equity Ratio – ER, Indebtedness Ratio – IR, Interest Coverage – IC, Interest Expense – IE, Equity to Fixed Assets Ratio – EFAR, Total Assets Turnover Ratio – TATR, Average Collection Period – ACP, Creditors Payment Period – CPP and Cost Ratio – CR. Basic DEA models include CCR or CRS (constant returns to scale) DEA models and BCC DEA models. In this paper we applied CCR model, which assumes constant returns to scale. An innovative approach to the production unit`s financial health analysis was the application of input-oriented and output oriented DEA CCR model. For the implementation of these models, it was necessary to reduce the number of financial indicators. Therefore we used correlation matrix. The adequate number of financial indicators for DEA CCR model was set based on the recommendation of Klieštik (2009), that the number of financial indicators should not exceed one third of the number of studied production units. Therefore we selected group of seven financial indicators. Four indicators from this group - ROA, TL, TATR and IC - represent inputs of CCR model. These indicators cover all areas of production unit`s financial health assessment and correlation between them is partially eliminated. The other three indicators from the selected group - CPP, IR and CR - represent outputs of CCR model. In the next part of the paper we formulated input-oriented primary model and dual one. We formulated output-oriented models too. These models were used to assess and predict financial health of the analysed businesses.

3.1. Input-oriented CCR model
The input-oriented CCR primary model in linear programming form (LP$_o$) is:

Max $z = \sum_1^n v_j \times y_{jo}$, subject to $\sum_1^n v_j \times y_{jr} \leq \sum_1^m u_i \times x_{ir}$, $\sum_1^m u_i \times x_{io} = 1$, $u_i \geq 0, v_j \geq 0$, o $\in$ $(1, \ldots\ldots, s), j \in (1, \ldots\ldots, n), i \in (1, \ldots\ldots, m), r \in (1, \ldots\ldots, s)$.

Dual model to LP$_o$ model for DMU$_o$, $o \in$ (1,………….,s), can be according to linear programming theory stated as follows:

Min θ_o
s.t.
$\sum_1^n \lambda_j x_{ij} \leq \theta_o x_{io}$, $\sum_1^n \lambda_j y_{rj} \geq y_{ro}$, $\lambda_j \geq 0$, i =1…..m;   j = 1…..n;   r = 1,……s; where λ is n-dimensional vector and θ is the real number.

When solving input-oriented dual linear programming model for particular DMUs we used slacks s_r^+ and s_i^-, which are vectors of complementary inputs and outputs. Slacks are in objective function multiplied by constant greater than „0", which can generally be 10^{-6} or 10^{-8}. Values of s_r^+ and s_i^- of efficient DMU are equal to „0" (Vincová, 2005). Input-oriented dual linear programming model for DMU1 with the use of selected inputs and outputs is (Horváthová, Mokrišová, 2018):

Min $z = \theta_1 - 0.00000001\ s_1^- - 0.00000001 s_2^- - 0.00000001 s_3^- - 0.00000001 s_4^+ - 0.00000001 s_5^+ - 0.00000001 s_6^+ - 0.00000001 s_7^+$

subject to

$0.975\lambda_1 + 0.997\lambda_2 + 0.998\lambda_3 + 0.990\lambda_4 + 0.928\lambda_5 + 0.976\lambda_6 + 0.991\lambda_7 + 1.048\lambda_8 + 0.884\lambda_9 + 0.928\lambda_{10} + 0.933\ \lambda_{11} + 0.941 \lambda_{12} + 0.966\lambda_{13} + 0.988\lambda_{14} + 0.894\ \lambda_{15} + 0.958\ \lambda_{16} + 0.947\ \lambda_{17} + 0.756\ \lambda_{18} + 0.958\ \lambda_{19} + 0.899\ \lambda_{20} + 0.920\ \lambda_{21} + 0.951 \lambda_{22} + 0.854\ \lambda_{23} + 0.981\ \lambda_{24} + 0.986\ \lambda_{25} + 0.883\ \lambda_{26} + 0.908\ \lambda_{27} + 0.923\ \lambda_{28} + 0.931\ \lambda_{29} + 0.965\ \lambda_{30} + s_1^- - 0.975\theta_1 \leq 0$

$0.12\lambda_1 + 0.72\lambda_2 + 0.54\lambda_3 + 0.37\lambda_4 + 0.41\lambda_5 + 0.44\lambda_6 + 0.25\lambda_7 + 0.35\lambda_8 + 0.25\lambda_9 + 0.32\lambda_{10} + 0.35\lambda_{11} + 0.07\lambda_{12} + 0.25\lambda_{13} + 0.07\lambda_{14} + 0.29\lambda_{15} + 0.15\lambda_{16} + 0.62\lambda_{17} + 0.21\lambda_{18} + 0.12\lambda_{19} + 0.54\lambda_{20} + 0.11\lambda_{21} + 0.09\lambda_{22} + 0.60\lambda_{23} + 0.36\lambda_{24} + 0.19\lambda_{25} + 0.51\lambda_{26} + 0.12\lambda_{27} + 0.33\lambda_{28} + 0.29\lambda_{29} + 0.48\lambda_{30} + s_2^- - 0.12\theta_1 \leq 0$

$0.34\lambda_1 + 0.93\lambda_2 + 2.37\lambda_3 + 0.67\lambda_4 + 0.76\lambda_5 + 1.11\lambda_6 + 0.25\lambda_7 + 1.19\lambda_8 + 1.25\lambda_9 + 1.77\lambda_{10} + 2.69\lambda_{11} + 0.46\lambda_{12} + 1.15\lambda_{13} + 0.81\lambda_{14} + 0.45\lambda_{15} + 0.19\lambda_{16} + 1.81\lambda_{17} + 1.19\lambda_{18} + 1.66\lambda_{19} + 1.82\lambda_{20} + 0.96\lambda_{21} + 0.09\lambda_{22} + 8.22\lambda_{23} + 56.61\lambda_{24} + 4.54\lambda_{25} + 8.05\lambda_{26} + 2.08\lambda_{27} + 1.93\lambda_{28} + 5.1\lambda_{29} + 4.79\lambda_{30} + s_3^- - 0.34\theta_1 \leq 0$

$0.10\lambda_1 + 0.01\lambda_2 + 0.01\lambda_3 + 0.01\lambda_4 + 0.04\lambda_5 + 0.02\lambda_6 + 0.01\lambda_7 - 0.06\lambda_8 + 0.12\lambda_9 + 0.04\lambda_{10} + 0.08\lambda_{11} + 0.27\lambda_{12} + 0.06\lambda_{13} + 0.07\lambda_{14} + 0.09\lambda_{15} + 0.03\lambda_{16} + 0.03\lambda_{17} + 0.26\lambda_{18} + 0.07\lambda_{19} + 0.08\lambda_{20} + 0.25\lambda_{21} + 0.04\lambda_{22} + 0.12\lambda_{23} + 0.03\lambda_{24} + 0.04\lambda_{25} + 0.12\lambda_{26} + 0.30\lambda_{27} + 0.06\lambda_{28} + 0.08\lambda_{29} + 0.02\lambda_{30} - s_4^+ \geq 0.10$

$2.22\lambda_1 + 1.40\lambda_2 + 0.01\lambda_3 + 0.66\lambda_4 + 0.65\lambda_5 + 0.64\lambda_6 + 1.54\lambda_7 + 0.58\lambda_8 + 1.00\lambda_9 + 1.57\lambda_{10} + 0.71\lambda_{11} + 1.74\lambda_{12} + 0.62\lambda_{13} + 2.31\lambda_{14} + 0.77\lambda_{15} + 2.80\lambda_{16} + 1.83\lambda_{17} + 1.83\lambda_{18} + 1.53\lambda_{19} + 0.46\lambda_{20} + 2.28\lambda_{21} + 5.91\lambda_{22} + 1.42\lambda_{23} + 0.64\lambda_{24} + 1.12\lambda_{25} + 0.44\lambda_{26} + 1.35\lambda_{27} + 0.52\lambda_{28} + 0.65\lambda_{29} + 0.36\lambda_{30} - s_5^+ \geq 2.22$

$2.05\lambda_1 + 0.51\lambda_2 + 0.48\lambda_3 + 0.45\lambda_4 + 0.52\lambda_5 + 0.50\lambda_6 + 0.41\lambda_7 + 1.52\lambda_8 + 0.88\lambda_9 + 0.46\lambda_{10} + 0.98\lambda_{11} + 4.54\lambda_{12} + 1.50\lambda_{13} + 6.01\lambda_{14} + 0.74\lambda_{15} + 0.74\lambda_{16} + 0.44\lambda_{17} + 0.98\lambda_{18} + 1.34\lambda_{19} + 0.58\lambda_{20} + 3.05\lambda_{21} + 0.89\lambda_{22} + 0.73\lambda_{23} + 0.63\lambda_{24} + 0.85\lambda_{25} + 0.94\lambda_{26} + 3.05\lambda_{27} + 0.44\lambda_{28} + 1.02\lambda_{29} + 0.43\lambda_{30} - s_6^+ \geq 2.05$

$39\ 827\lambda_1 + 1.64\lambda_2 + 1.09\lambda_3 + 1.58\lambda_4 + 23.81\lambda_5 + 7.41\lambda_6 + 2.21\lambda_7 - 5.74\lambda_8 + 7.11\lambda_9 + 5.14\lambda_{10} + 7.52\lambda_{11} + 0\lambda_{12} + 9.28\lambda_{13} + 126.7\lambda_{14} + 16.81\lambda_{15} + 23.18\lambda_{16} + 6.06\lambda_{17} + 14.86\lambda_{18} + 7.41\lambda_{19} + 3.66\lambda_{20} + 34.92\lambda_{21} + 0\lambda_{22} + 4.56\lambda_{23} + 1.83\lambda_{24} + 1.53\lambda_{25} + 17.77\lambda_{26} + 52.06\lambda_{27} + 2.53\lambda_{28} + 7.64\lambda_{29} + 3.31\lambda_{30} - s_7^+ \geq 39\ 827$

$\lambda_1 + \lambda_2 + \lambda_3 + \lambda_4 + \lambda_5 + \lambda_6 + \lambda_7 + \lambda_8 + \lambda_9 + \lambda_{10} + \lambda_{11} + \lambda_{12} + \lambda_{13} + \lambda_{14} + \lambda_{15} + \lambda_{16} + \lambda_{17} + \lambda_{18} + \lambda_{19} + \lambda_{20} + \lambda_{21} + \lambda_{22} + \lambda_{23} + \lambda_{24} + \lambda_{25} + \lambda_{26} + \lambda_{27} + \lambda_{28} + \lambda_{29} + \lambda_{30}.$ - free

$\lambda_1, \lambda_2, \ldots\ldots, \lambda_{30} \geq 0$

$s_1^-, s_2^-, s_3^- \geq 0$

$s_4^+, s_5^+, s_6^+, s_7^+ \geq 0$

3.2. Output-oriented CCR model

The output-oriented CCR primary model in linear programming form (LP$_o$) is:

Min $z = \sum_1^m u_i \times x_{io}$, subject to $\sum_1^n v_j \times y_{jr} \leq \sum_1^m u_i \times x_{ir}$, $\sum_1^n v_j \times y_{jo} = 1$, $u_i \geq 0, v_j \geq 0$, o $\in (1, \ldots\ldots, s), j \in (1, \ldots\ldots, n), i \in (1, \ldots\ldots, m), r \in (1, \ldots\ldots, s)$.

Dual model to LP$_o$ model for DMU$_o$, $o \in (1, \ldots\ldots\ldots, s)$, can be according to linear programming theory stated as follows:

Max ϕ_o

s.t.

$\sum_1^n \lambda_j x_{ij} \leq x_{io}$, $\sum_1^n \lambda_j y_{rj} \geq \phi_o y_{ro}$, $\lambda_j \geq 0$, i $=1\ldots.$m; j $= 1\ldots.$n; r $= 1,\ldots\ldots$s; where λ is n-dimensional vector and ϕ is the real number.

With the use of selected inputs and outputs we formulated the following output-oriented dual linear programming model for DMU1. We applied the same procedure as for the first dual model.

Max $z = \Phi_1 + 0.00000001\ s_1^- + 0.00000001s_2^- + 0.00000001s_3^- + 0.00000001s_4^+ + 0.00000001s_5^+ + 0.00000001s_6^+ + 0.00000001s_7^+$

subject to

$0.975\lambda_1 + 0.997\lambda_2 + 0.998\lambda_3 + 0.990\lambda_4 + 0.928\lambda_5 + 0.976\lambda_6 + 0.991\lambda_7 + 1.048\lambda_8 + 0.884\lambda_9 + 0.928\lambda_{10} + 0.933\lambda_{11} + 0.941\lambda_{12} + 0.966\lambda_{13} + 0.988\lambda_{14} + 0.894\lambda_{15} + 0.958\lambda_{16} + 0.947\lambda_{17} + 0.756\lambda_{18} + 0.958\lambda_{19} + 0.899\lambda_{20} + 0.920\lambda_{21} + 0.951\lambda_{22} + 0.854\lambda_{23} + 0.981\lambda_{24} + 0.986\lambda_{25} + 0.883\lambda_{26} + 0.908\lambda_{27} + 0.923\lambda_{28} + 0.931\lambda_{29} + 0.965\lambda_{30} + s_1^- - 0.975 \leq 0$

$0.12\lambda_1 + 0.72\lambda_2 + 0.54\lambda_3 + 0.37\lambda_4 + 0.41\lambda_5 + 0.44\lambda_6 + 0.25\lambda_7 + 0.35\lambda_8 + 0.25\lambda_9 + 0.32\lambda_{10} + 0.35\lambda_{11} + 0.07\lambda_{12} + 0.25\lambda_{13} + 0.07\lambda_{14} + 0.29\lambda_{15} + 0.15\lambda_{16} + 0.62\lambda_{17} + 0.21\lambda_{18} + 0.12\lambda_{19} + 0.54\lambda_{20} + 0.11\lambda_{21} + 0.09\lambda_{22} + 0.60\lambda_{23} + 0.36\lambda_{24} + 0.19\lambda_{25} + 0.51\lambda_{26} + 0.12\lambda_{27} + 0.33\lambda_{28} + 0.29\lambda_{29} + 0.48\lambda_{30} + s_2^- - 0.12 \leq 0$

$0.34\lambda_1 + 0.93\lambda_2+2.37\lambda_3+0.67\lambda_4+0.76\lambda_5+1.11\lambda_6+0.25\lambda_7+1.19\lambda_8+1.25\lambda_9+1.77\lambda_{10} + 2.69\ \lambda_{11}+0.46$
$\lambda_{12}+1.15\lambda_{13}+0.81\lambda_{14}+0.45\ \lambda_{15}+0.19\ \lambda_{16}+1.81\ \lambda_{17}+1.19\ \lambda_{18}+1.66\ \lambda_{19}+1.82\ \lambda_{20}+0.96\lambda_{21}+0.09\ \lambda_{22}+8.22\lambda_{23}+56.61$
$\lambda_{24}+4.54\ \lambda_{25}+8.05\ \lambda_{26}+2.08\ \lambda_{27}+1.93\ \lambda_{28}+5.1\ \lambda_{29}+4.79\ \lambda_{30} +s_3^- - 0.34 \leq 0$

$0.10\lambda_1 + 0.01\lambda_2+0.01\lambda_3+0.01\lambda_4+0.04\lambda_5+0.02\lambda_6+0.01\lambda_7-0.06\lambda_8+0.12\lambda_9+0.04\lambda_{10} + 0.08\ \lambda_{11}+0.27$
$\lambda_{12}+0.06\lambda_{13}+0.07\lambda_{14}+0.09\ \lambda_{15}+0.03\ \lambda_{16}+0.03\ \lambda_{17}+0.26\lambda_{18}+0.07\ \lambda_{19}+0.08\ \lambda_{20}+0.25\lambda_{21}+0.04\ \lambda_{22}+0.12\lambda_{23}+0.03$
$\lambda_{24}+0.04\ \lambda_{25}+0.12\ \lambda_{26}+0.30\ \lambda_{27}+0.06\ \lambda_{28}+0.08\ \lambda_{29}+0.02\ \lambda_{30} -s_4^+ - 0.10\Phi \geq 0$

$2.22\lambda_1 + 1.40\lambda_2+0.01\lambda_3+0.66\lambda_4+0.65\lambda_5+0.64\lambda_6+1.54\lambda_7+0.58\lambda_8+1.00\lambda_9+1.57\lambda_{10} + 0.71\ \lambda_{11}+1.74$
$\lambda_{12}+0.62\lambda_{13}+2.31\lambda_{14}+0.77\ \lambda_{15}+2.80\ \lambda_{16}+1.83\ \lambda_{17}+1.83\lambda_{18}+1.53\lambda_{19}+0.46\ \lambda_{20}+2.28\lambda_{21}+5.91\ \lambda_{22}+1.42\lambda_{23}+0.64$
$\lambda_{24}+1.12\ \lambda_{25}+0.44\ \lambda_{26}+1.35\lambda_{27}+0.52\ \lambda_{28}+0.65\ \lambda_{29}+0.36\ \lambda_{30} -s_5^+ - 2.22\Phi \geq 0$

$2.05\lambda_1 + 0.51\lambda_2+0.48\lambda_3+0.45\lambda_4+0.52\lambda_5+0.50\lambda_6+0.41\lambda_7+1.52\lambda_8+0.88\lambda_9+0.46\lambda_{10} + 0.98\ \lambda_{11}+4.54$
$\lambda_{12}+1.50\lambda_{13}+6.01\lambda_{14}+0.74\ \lambda_{15}+0.74\ \lambda_{16}+0.44\ \lambda_{17}+0.98\lambda_{18}+1.34\lambda_{19}+0.58\ \lambda_{20}+3.05\lambda_{21}+0.89\lambda_{22}+0.73\lambda_{23}+0.63$
$\lambda_{24}+0.85\ \lambda_{25}+0.94\ \lambda_{26}+3.05\lambda_{27}+0.44\ \lambda_{28}+1.02\ \lambda_{29}+0.43\ \lambda_{30} -s_6^+ - 2.05\Phi \geq 0$

$39\ 827\lambda_1 + 1.64\lambda_2+1.09\lambda_3+1.58\lambda_4+23.81\lambda_5+7.41\lambda_6+2.21\lambda_7-5.74\lambda_8+7.11\lambda_9+5.14\lambda_{10} + 7.52$
$\lambda_{11}+0\lambda_{12}+9.28\lambda_{13}+126.7\lambda_{14}+16.81\ \lambda_{15}+23.18\ \lambda_{16}+6.06\ \lambda_{17}+14.86\lambda_{18}+7.41\lambda_{19}+3.66$
$\lambda_{20}+34.92\lambda_{21}+0\lambda_{22}+4.56\lambda_{23}+1.83\lambda_{24}+1.53\ \lambda_{25}+17.77\ \lambda_{26}+52.06\lambda_{27}+2.53\ \lambda_{28}+7.64\ \lambda_{29}+3.31\ \lambda_{30} -s_7^+ - 39827\Phi \geq 0$

$\lambda_1+ \lambda_2 + \lambda_3 + \lambda_4 + \lambda_5 + \lambda_6 + \lambda_7+ \lambda_8 + \lambda_9 + \lambda_{10} + \lambda_{11} + \lambda_{12} + \lambda_{13} + \lambda_{14} + \lambda_{15} + \lambda_{16} + \lambda_{17} + \lambda_{18} + \lambda_{19} + \lambda_{20} + \lambda_{21} + \lambda_{22} +$
$\lambda_{23} + \lambda_{24} + \lambda_{25} + \lambda_{26} + \lambda_{27} + \lambda_{28} + \lambda_{29} + \lambda_{30}.$- free
$\lambda_1, \lambda_2, \ldots\ldots, \lambda_{30} \geq 0$
$s_1^-, s_2^-, s_3^- \geq 0$
$s_4^+, s_5^+, s_6^+, s_7^+ \geq 0$

Using the computed values of λj, we can calculate the goal values of inputs and outputs. Production unit needs to know these values to increase efficiency. DMUs are fully (100 %) efficient if and only if both $\theta_o = 1$ and all slacks $s_i^-=0$, $s_r^+=0$. Inefficient DMU achieved θ_o less than „1", slacks $s_i^- \neq 0$, $s_r^+ \neq 0$ (Wen, 2015). The value of θ_o less than „1" shows the efficiency of the unit and the need for proportional reduction of inputs to make the DMU efficient, it means in which way the unit should improve its behaviour to become efficient. Proportional reduction of inputs is calculated according to formula: $x_o = X\lambda$ or $x_o = \theta_o\ x_o - s_i^-$. Interpretation of the results of output-oriented CCR model is similar to input-oriented CCR model. DMU$_o$ is efficient if the optimal value of objective function is equal to „1" and all slacks $s_i^-=0$, $s_r^+=0$. If the value of objective function is higher than „1", slacks $s_i^- \neq 0$, $s_r^+ \neq 0$, the DMU does not work efficiently and the optimal value of Φ_o „1" shows need for proportional increase in business outputs. Proportional increase in outputs is calculated according to formula: $y_o = Y\lambda$ or $y_o = \Phi_o\ y_o + s_r^+$.

4. RESULTS AND DISCUSSION

Table 1 shows actual values of selected outputs and their adjusted – goal values. Actual values are marked by index „a" – actual, adjusted values are marked by index „g" – goal. In line with the achieved efficiency „1", businesses 1, 12, 14, 18, 21, 22 and 27 have the same actual and goal values of outputs. Based on the calculated data λj from the output-oriented DEA CCR model, we can consider businesses 12, 14 and 22 as reference businesses. Business 12 achieved high Return on Assets compared to businesses from the analysed sample. Its Return on Assets is 27.03%. The same level of profitability achieved only businesses 18, 21 and 27, which are together with business 12 reference businesses. Businesses which reached efficiency „1", achieved also high level of the indicators Total Liquidity, Assets Turnover and Interest Coverage. In the case of indicator Interest Coverage it should be noted that these businesses achieved either a zero values of this indicator, i.e. they don`t have interest-bearing long-term debt; or they achieve high value of Interest Coverage, i.e. they have low interest-bearing long-term debt. Therefore we can conclude that in order to achieve efficiency „1", businesses need to achieve a combination of high values of all selected outputs from the area of profitability, liquidity, activity and indebtedness.

Table 1: Actual and goal values of outputs (authors)

DMU	ROAa	TLa	TATRa	ICa	ROAg	TLg	TATRg	ICg
1	**0.1037**	**2.2249**	**2.0498**	**3 9827.32**	**0.1037**	**2.2249**	**2.0498**	**3 927.32**
2	0.0105	1.4019	0.5056	1.64	0.0519	5.4280	1.9576	25.5248
3	0.0129	0.0088	0.4811	1.09	0.1507	2.1597	5.6216	82.1472
4	0.0145	0.6572	0.4470	1.58	0.0963	4.3640	2.9682	33.5982
5	0.041	0.6529	0.5197	23.81	0.2010	3.1998	2.5462	3.8816
6	0.015	0.6393	0.5019	7.41	0.0959	4.0888	3.2099	40.4492
7	0.007	1.5395	0.4083	2.21	0.0491	5.7174	1.5163	14.6736
8	-0.0643	0.5848	1.5204	-5.74	0.0785	2.4527	6.3765	134.4467
9	0.121	1.0018	0.8838	7.11	0.2707	2.2414	1.9774	11.3776
10	0.0449	1.5675	0.4590	5.14	0.1298	4.5320	1.3267	4.1952
11	0.0779	0.7054	0.9821	7.52	0.2562	2.3196	3.2300	4.8067
12	**0.2703**	**1.7391**	**4.5395**	**0.00**	**0.2703**	**1.7391**	**4.5395**	**0.00**
13	0.0574	0.6178	1.5018	9.28	0.1915	1.9257	5.0175	47.8768
14	**0.074**	**2.311**	**6.0081**	**126.68**	**0.0740**	**2.3110**	**6.0081**	**126.68**
15	0.0856	0.7662	0.7357	16.81	0.2355	2.1064	3.7578	0.9381
16	0.0327	2.7986	0.7444	23.18	0.0634	5.4335	1.4439	6.5587
17	0.0304	1.8302	0.4389	6.06	0.0868	5.2290	1.2534	1.4538
18	**0.2591**	**1.8313**	**0.9823**	**14.86**	**0.2591**	**1.8313**	**0.9823**	**14.86**
19	0.0652	1.5306	1.3393	7.41	0.1539	3.6136	3.1619	13.6046
20	0.0829	0.4621	0.5774	3.66	0.3020	1.7559	2.1035	34.7475
21	**0.2526**	**2.2772**	**3.0478**	**34.92**	**0.2526**	**2.2772**	**3.0478**	**34.92**
22	**0.044**	**5.9106**	**0.8898**	**0.00**	**0.0440**	**5.9106**	**0.8898**	**0.00**
23	0.118	1.4217	0.7327	4.56	0.2285	2.7533	1.4190	10.8065
24	0.0261	0.644	0.6301	1.83	0.1454	3.5873	3.5098	26.7837
25	0.0405	1.1209	0.8487	1.53	0.1439	3.9838	3.0164	13.8876
26	0.1177	0.4359	0.9383	17.77	0.2950	1.5977	2.3514	39.3346
27	**0.299**	**1.3546**	**3.0539**	**52.06**	**0.2990**	**1.3546**	**3.0539**	**52.06**
28	0.0596	0.5218	0.4382	2.53	0.2768	2.4231	2.0349	11.5867
29	0.0814	0.6545	1.0180	7.64	0.2664	2.1415	3.3316	5.0847
30	0.0231	0.3647	0.4322	3.31	0.1940	3.0628	3.6300	8.6755

Table 2 shows the actual values of selected inputs and the need for their proportional reduction to achieve the goal values. Actual values are marked by index „a", the need for their proportional reduction is marked by index „g". In line with the achieved efficiency „1", businesses 1, 12, 14, 18, 21, 22 and 27 have the same actual and goal values of inputs. These businesses achieved low value of Creditors Payment Period. The average value of this indicator is 22 days. The exception is business 18 which covers this shortage by Cost Ratio „0". Businesses which achieved efficiency „1" have also low value of Indebtedness Ratio. The exceptions are businesses 18 and 27, which covers this shortage by low Cost Ratio. Based on the calculated data λj from the input-oriented DEA CCR model, we can consider businesses 12, 14 and 22 as reference businesses. Business 14, which achieved high value of Cost Ratio, is reference business due to low Creditors Payment Period and low Indebtedness Ratio. This model takes into account the combination of all three inputs.

Table following on the next page

Table 2: Actual values of inputs and the need for their proportional reduction (authors)

DMU	CRa	CPPa	Ira	CRg	CPPg	Irg
1	**0.9750**	**0.1201**	**0.34**	**0.9751**	**0.1201**	**0.34**
2	0.9972	0.7214	0.93	0.2575	0.0224	0.0617
3	0.9981	0.5391	2.37	0.0548	0.0038	0.0450
4	0.9905	0.3716	0.67	0.0823	0.0075	0.0078
5	0.9285	0.4064	0.76	0.1885	0.0232	0.1105
6	0.9761	0.4385	1.11	0.0762	0.0070	0.0072
7	0.9909	0.2531	0.25	0.2360	0.0216	0.0223
8	1.0484	0.3464	1.19	0.2499	0.0172	0.2050
9	0.8840	0.2459	1.25	0.3668	0.0805	0.46
10	0.9283	0.3154	1.77	0.2867	0.0748	0.4208
11	0.9327	0.3475	2.69	0.2516	0.0336	0.2037
12	**0.9406**	**0.0671**	**0.46**	**0.9406**	**0.0671**	**0.46**
13	0.9662	0.2516	1.15	0.2809	0.0198	0.1742
14	**0.9878**	**0.0682**	**0.81**	**0.9878**	**0.0682**	**0.81**
15	0.8937	0.2852	0.45	0.2713	0.0193	0.1327
16	0.9582	0.1512	0.19	0.4288	0.0392	0.0406
17	0.9479	0.6234	1.81	0.2751	0.0252	0.0260
18	**0.7564**	**0.2127**	**1.19**	**0.7564**	**0.2127**	**1.19**
19	0.9580	0.1207	1.66	0.3608	0.0292	0.1080
20	0.8990	0.5357	1.82	0.2468	0.0502	0.4776
21	**0.9196**	**0.1051**	**0.96**	**0.9196**	**0.1051**	**0.96**
22	**0.9507**	**0.0869**	**0.09**	**0.9507**	**0.0869**	**0.09**
23	0.8545	0.5984	8.22	0.4412	0.0931	0.4837
24	0.9812	0.3585	56.61	0.1386	0.0112	0.0407
25	0.9858	0.1881	4.54	0.2469	0.0203	0.0672
26	0.8836	0.5142	8.05	0.3525	0.0632	0.7216
27	**0.9077**	**0.115**	**2.08**	**0.9077**	**0.115**	**2.08**
28	0.9227	0.328	1.93	0.1800	0.0395	0.2257
29	0.9305	0.2866	5.1	0.2649	0.0355	0.2153
30	0.9650	0.4827	4.79	0.0728	0.0052	0.0356

The results of efficiency based on input-oriented model and output-oriented model are in Table 3. Results indicate that reference businesses achieved in both models efficiency „1".

Table following on the next page

Table 3: Comparison of business efficiency according to input-oriented model and output-oriented model (authors)

DMU	Efficiency θ	Efficiency Ø	DMU	Efficiency θ	Efficiency Ø
1	**1.00**	**1.00**	16	0.51	1.94
2	0.26	3.87	17	0.35	2.86
3	0.09	11.68	**18**	**1.00**	**1.00**
4	0.15	6.64	19	0.42	2.36
5	0.20	4.91	20	0.27	3.64
6	0.16	6.40	**21**	**1.00**	**1.00**
7	0.27	3.71	**22**	**1.00**	**1.00**
8	0.24	4.19	23	0.52	1.94
9	0.45	2.24	24	0.18	5.57
10	0.35	2.89	25	0.28	3.55
11	0.30	3.29	26	0.40	2.51
12	**1.00**	**1.00**	**27**	**1.00**	**1.00**
13	0.30	3.36	28	0.22	4.64
14	**1.00**	**1.00**	29	0.31	3.27
15	0.36	2.75	30	0.12	8.40

Efficient businesses are businesses 1, 12, 14, 18, 21, 22 and 27. Basic reference businesses are businesses 12, 14 and 22. The goal values of inputs and outputs of businesses were derived from the values of references businesses. Reference businesses achieved optimal values of inputs and outputs.

5. CONCLUSION

Applying CCR model we confirmed that there are 7 businesses from the analysed sample of 30 businesses, which efficiency is „1". We can say that these businesses are financially healthy. Efficiency of these businesses was confirmed by input-oriented and also output-oriented model. These businesses achieve optimal values of inputs as well as outputs. It is necessary to highlight the low value of indebtedness and low share of short-term debt in capital and therefore low value of Creditors Payment Period. Correct combination of inputs achieved DMUs 12, 14 and 22, which are reference businesses. Efficient businesses achieved also optimal values of outputs, in particular they achieved Total Liquidity more than „1", high Total Assets Turnover Ratio as well as high Return on Assets. Results of CCR model were compared with the results of Altman model. We found out that reference businesses achieved the highest values of Altman model (DMU12, 6.84; DMU14 7.32; DMU22 5.99). Therefore we can say that these businesses are not threatened with bankruptcy. In order to achieve more accurate results, attention should be paid to the selection of research sample. It is necessary to exclude businesses which achieve extremely high or low results of selected inputs and outputs. We should exclude also businesses which reach zero values of indicators. By performing the above-mentioned steps in the selection of the research sample, DEA CCR method can be an appropriate tool for assessing and predicting business financial health.

LITERATURE:

1. Araghi, M. K., Makvandi, S. (2013). Comparing Logit, Probit and Multiple Discriminant Analysis Models in Predicting Bankruptcy of Companies. *Asian Journal of Finance & Accounting*, 5(1), 48–59. Retrieved 28.02.2018 from https://doi.org/10.5296/ajfa.v5i1.2977.

2. Banker, R. D., Charnes, A. and Cooper, W.W. (1984). Some Models for Estimating Technical Scale Inefficiencies in Data Envelopment Analysis. *Management Science*, 30(9), 1078–1092. Retrieved 22.02.2018 from https://doi.org/10.1287/mnsc.30.9.1078.

3. Charnes, A., Cooper, W. W. and Rhodes, E. (1978). Measuring the Efficiency of Decision Making Units. *European Journal of Operational Research*, 2(6), 429–444. Retrieved 23.02.2018 from https://doi.org/10.1016/0377-2217(78)90138-8.

4. Debreu, G. (1951). The coefficient of resource utilization. *Econometrica*, 19(3), 93-121. Retrieved 02.03.2018 from https://doi.org/10.2307/1906814.

5. Dluhošová, D. (2008). Finanční řízení a rozhodování podniku: analýza, investování, oceňování, riziko, flexibilita. Retrieved 02.03.2018 from https://www.martinus.sk/?uItem=84956.

6. Färe, R., S. Grosskopf and C.A.K. Lovell. (1985). The measurement of efficiency of production. Boston: Kluwer – Nijhoff Publishing, Kluwer Academic Publisher. Retrieved 10.01.2018 from https://doi.org/10.1007/978-94-015-7721-2.

7. Farrell, M. J. (1957). The Measurement of Productive Efficiency. *Journal of the Royal Statistical Society*, Series A, 120(3), 253/290. Retrieved 12.01.2018 from http://www.jstor.org/stable/2343100.

8. Horváthová, J. and Mokrišová, M. (2018). The use of innovative approaches in assessing and predicting business financial health. *Book of Proccedings from 27th International Scientific Conference on Economic and Social Development,* pp. 728-738. Retrieved 12.03.2018 from http://www.esd-conference.com/past-conferences**.

9. Klieštik, T. (2009). Kvantifikácia efektivity činností dopravných podnikov pomocou Data Envelopment Analysis. *Ekonomie a management,* 12(1), 122-145. Retrieved 10.01.2018 from http://www.ekonomie-management.cz/download/1331826707_1add/13_kliestik.pdf.

10. Koopmans, T. C. (1951). Analysis of production as an efficient combination of activities. *Activity analysis of production and allocation*, pp. 33-97. London: John Wiley and Sons Inc.

11. Mendelová, V. and Bieliková, T. (2017). Diagnostikovanie finančného zdravia podnikov pomocou metódy DEA: aplikácia na podniky v Slovenskej republike. *Politická ekonomie,* 65(1), 26–44. Retrieved 10.01.2018 from https://doi.org/10.18267/j.polek.1125.

12. Paradi, J. C., Asmild, M., Simak, P. C. (2004). Using DEA and Worst Practice DEA in Credit Risk Evaluation. *Journal of Productivity Analysis*, 21(2), 153–165. Retrieved 15.02.2018 from https://doi.org/10.1023/B:PROD.0000016870.47060.0b.

13. RÚZ (2017). *Register účtovných závierok*. Retrieved 10.01.2018 from http://www.registeruz.sk/cruz-public/home/.

14. Vavřina, J., Hampel, D., Janová J. (2013). New Approaches for the Financial Distress Classification in Agribusiness. *Acta Universitatis Agriculturae et Silviculturae Mendelianae Brunensis*, 61(4), 1177–1182. Retrieved 15.02.2018 from https://doi.org/10.11118/actaun201361041177.

15. Vincová, K. (2005). Využitie modelov DEA na hodnotenie efektívnosti. *Biatec,* 13(8), 24-28. Retrieved 19.02.2018 from https://www.nbs.sk/_img/Documents/_PUBLIK_NBS_FSR/Biatec/Rok2005/BIATEC_8_2005.pdf.

16. Wen, W. (2015). *Uncertain Data Envelopment Analysis: Uncertainty and Operations Research.* Springer-Verlag Berlin Heidelberg. https://doi.org/*10*.1007/978-3-662-43802-2.

SUSTAINABILITY OF BRACKISH WATER AQUACULTURE IN MALAYSIA

Sara Ravan Ramzani
Institute of Agricultural and Food Policies Studies (IKDPM)
Universiti Putra Malaysia 43400 Serdang, Selangor

Mohd Mansor Ismail
Institute of Agricultural and Food Policies Studies (IKDPM)
Universiti Putra Malaysia 43400 Serdang, Selangor

ABSTRACT

Responsible and sustainable aquaculture in Malaysia is one of the government's most important objectives as a means of increasing food security and regional development. This study provides a clear understanding of the current status of aquaculture in Malaysia and describes different aspects of government incentives that shall be considered for suitable and viable aquaculture development. The study evaluated Penaeus vannamei, Grouper and Barramundi fishes which is on native brackish water species using the net present value (NPV), internal rate of return (IRR) and benefit cost ratio (BCR). The evaluation process was carried out using four different phases: Base study, Pioneer status (PS), Investment Tax Allowance (ITA) and Accelerated Capital Allowance (ACA) incentives. Some of the main indicators necessary for evaluating the success of aquaculture operations showed IRR in for the PS or ITA incentive is the best for shrimp aquaculture operators. Having accepted the PS or ITA incentive, aquaculture farms are eligible to apply for ACA. The ACA on capital expenditure is to be depreciated fully within 3 years. The result showed IRR with PS and ACA has increased to 46 % on P. vannamei, 64 % on Grouper and IRR with ITA and ACA has increased to 40% on Barramundi. This means that the Brackishwater operators should choose to accept PS or ITA with ACA in order to maximize private profitability.
Keywords: Government Incentives, Pioneer Status, Financial Viability Criteria, Penaeus vannamei, Grouper, Barramundi, Peninsular Malaysia

1. INTRODUCTION

Asia is a major producer of aquaculture products (66.4%) with China alone accounting for about 10% of world exports of fish production in 2009 [1]. Aquaculture is now recognized as a viable and a profitable practice that attracts commercial investment at a large-scale. It is believed that the superior taste of prawns, their high nutrition value and exceptional market avenues are the reason of their significance in aquatic crustacean farming [2]. However, the huge constraints in penaeid prawns compared to the numbers of freshwater species are the higher production and greater size variation at harvest due to problems with cannibalism in freshwater prawns, which badly affect its market value [1]. FAO, [2] has identified the economic benefit of brackish water species in Malaysia. Aquaculture is now recognized as a viable and a profitable practice that attracted commercial investment at a large scale in Malaysia. In 2006, the giant tiger shrimp (Penaeus monodon) and the western white shrimp (Penaeus vannamei) probably accounted for approximately 90% of the shrimp produced on farms around the world [6]. It was deemed necessary to have a forum where a comprehensive discussion focused on the experiences of Malaysia farming that have already been production of brackish water species and their respective assessments of risks and benefits [3, 4]. Economic measurement is the way to prove any cultivation project is viable or not by identify all the resources and government incentives by supporting farms to increase profitability. Briefly introduced government incentives were;
a) Pioneer status company enjoys a partial exemption from income tax.

It pays tax on 30% of statutory income for five years, commencing from its production day (defined as the day of first sale of the aquaculture produce), b) An investment tax allowance (ITA); A farm granted ITA is eligible for an allowance of 70% of its qualifying capital expenditure incurred within five years from the date on which the first qualifying capital expenditure is incurred. The qualifying capital expenditure incurred on include as aquaculture productions, and c) Accelerated Capital Allowance (ACA); the ACA on the capital expenditure is to be utilized within the next three years, that is, an initial allowance of 60% for the first year and an annual allowance of 20% for the following two years. This also coincided by Seyed nezhad fahim [4] who stated that profit is the major factor in investigating economic enterprises. In this research, the study aims to evaluate the financial viability of shrimp farming with government incentives and take advantage of the various tax incentives available for their benefit. Good knowledge on the impact of government incentives on tax payment will provide them with better strategies to effectively plan their business and investment.

2. MATERIAL AND METHODS

2.1. Study area and data collection

The data and information were gathered from a face to face survey in 2010 that included several states in Malaysia, namely Penang, Selangor, Sabah & Sarawak, Perak and Johor. The study was assisted by the Department of Fisheries (DOF), and the corporations of shrimp farming were highly valued. The respondents were randomly selected from lists of shrimp operators at the DOF.

2.2. Data analysis

The data were analyzed using Microsoft Excel computer spreadsheet software. The private profitability indicators were net present value (NPV), internal rate of return (IRR), benefit-cost ratios (BCR) and payback period (PBP). The most frequent method used in the financial analysis was NPV. This is because NPV indicates the increased value of present net worth of a company attained from accepting the investment activity [4] [5]. NPV is consistent with the goal of a firm and it is generated by taking the present value of net cash inflows of a project less its initial investment [7]. Net cash inflow equals total inflow during a period less the expenses of generating the cash inflow. The formula for NPV is as follows:

$$NPV = \sum_{t=0}^{n} \frac{CF_t}{(1+i)^t}$$

Where,
CF_t = Cash flow in year t and,
i = Discount factor

The IRR is a (discounting factor) that brings the NPV to zero. In other words, IRR is the highest interest rate that the project can support. The minimum attractive rate of return or MARR is the interest rate that represents the minimum profit that an investor wants to gain when an investment is made. The IRR should be greater than MARR for an investment to be financially feasible. The formula of IRR is shown as:

$NPV = 0 = P_0 + P_1/(1+R) + P_2/(1+R)^2 + P_3/(1+R)^3 + \ldots + P_n/(1+R)^n$
Where,
$P_0, P_1, \ldots P_n$ equal the cash flows in periods 1, 2, . . . n, respectively; and
R equals the project's internal rate of return (IRR).

446

Benefit Cost Ratio (BCR) is another parameter measures the economic viability of an agriculture project. The BCR is defined as the total discounted benefits divided by the total discounted costs [8]. If the value of BCR is greater than 1, the project has a positive net benefits and otherwise. The higher the ratio means the greater the benefits relative to the costs. The formula of BCR is as follows:

BCR = Total Discounted Benefits (Total Discounted Costs)$^{-1}$

3. RESULTS AND DISCUSSION

The indicators showed a better result for the PS and ITA incentive with ACA to brackish water operators during the 10 year project evaluations on aquaculture farms in entire Malaysia. In all of brackish water farms, NPV after the ACA incentive showed a higher and positive value compare to individual PS and ITA. Table 1, indicated that on *P. vannamei* farms result showed that IRR (44%) and the NPV (778056.9554) for the PS was greater than that of the ITA, so PS was selected instead of ITA. Then, the project can still accept ACA (Table 1). The IRR for the PS with ACA is 46% which is higher than the ITA (41%) and individual PS (44%). This shows the project worth has improved and after incentives the project becomes more viable. Results on Grouper farms indicated that IRR (58%) and NPV (327150.3343) for the PS was greater than that of ITA, so PS was selected to continue on government incentives which reach to ACA. The IRR with ACA is 64% which is higher than PS (58%) and ITA (57%) (Table 2). The results on table 3, indicates that IRR (32.62 %) and NPV (107088.376) for ITA was greater than PS (NPV =71842. 95 and IRR= 25.62%) on Barramundi farms, so ITA was selected to continue on government incentives. It is better to invest in shrimp farming now as it has a higher IRR approximately 7 % which showed that higher return on investment compare to other species. In addition, all species for the B/C ratio, the ACA has a slightly higher B/C ratio than individual ITA and PS, this may be due to lower cost needed in ACA since the non-cash charges is higher, and thus it will tend to produce a higher B/C ratio as the cash inflow of the project is higher. In addition, the 10% rate also recorded a B/C ratio of the ACA higher than the base study. For the rate of 10% (standard rate), the NPV in ACA has a higher amount than the sole incentive. This indicates that the acceptance of ACA on aquaculture project will give higher profit to the aquaculture farm (Figure 1-3). Since the acceptance of agriculture incentives has improved project viability, the government effort in increasing food production through agriculture policy was deemed successful. The policy of reducing production costs and increased revenue, and hence, profitability should be continued. Perhaps the instruments used could be improved in order to better impact the target group. However, thus far there were not many researches about the impact of government incentive on Malaysian aquaculture products, especially shrimp farming [10]. Therefore, this research would ignite the potential high-growth sectors or encourage specific business activities that could employ plentiful underutilized resources in the Malaysian coastal areas.

Table following on the next page

Table 1: The Effect of Government Incentive on Penaeus vannamei farming, Malaysia 2010.

	Base Study	**PS**	**ITA**	**ACA**
NPV	569965.96	778056.95	685011.18	834578.69
IRR	36%	44%	41%	46%
MCR	97700	419610.27	97700	97700
B/C	6.833	2.854	8.011	9.542
PI	42.235	42.435	42.335	42.535
Break-even Point	31129.191	31239.191	31139.191	31289.191

Note; PS; Pioneer status, ITA; Investment Tax Allowance, ACA; Accelerated Capital Allowance and tax rate is 25%.

*Table 2: The Effect of Government Incentive on Grouper Fish farming, Malaysia 2010.*

	Base Study	**PS**	**ITA**	**ACA**
NPV	277589.29	327150.33	321324.72	382102.46
IRR	51%	58%	57%	64%
MCR	117814.86	97700	97700	117814.861
B/C	3.356	4.348	4.288	4.243
PI	12.952	13.020	13.0205	13.643
Break-even Point	8417	8417.172	8417.142	8417.372

Note; PS; Pioneer status, ITA; Investment Tax Allowance, ACA; Accelerated Capital Allowance and tax rate is 25%.

Table 3: The Effect of Government Incentive on Barramundi Fish farming, Malaysia 2010.

	Base Study	**PS**	**ITA**	**ACA**
NPV	66304.42	71842.95	107088.37	150730.36
IRR	24%	25.62%	32.62%	40%
MCR	87095.83	87095.833	87095.833	87095.83
B/C	1.761	1.824	2.229	2.730
PI	10.394	10.394	10.394	10.394
Break-even Point	20678.449	20678.47	20678.51	20678.56

Note; PS; Pioneer status, ITA; Investment Tax Allowance, ACA; Accelerated Capital Allowance and tax rate is 25%.
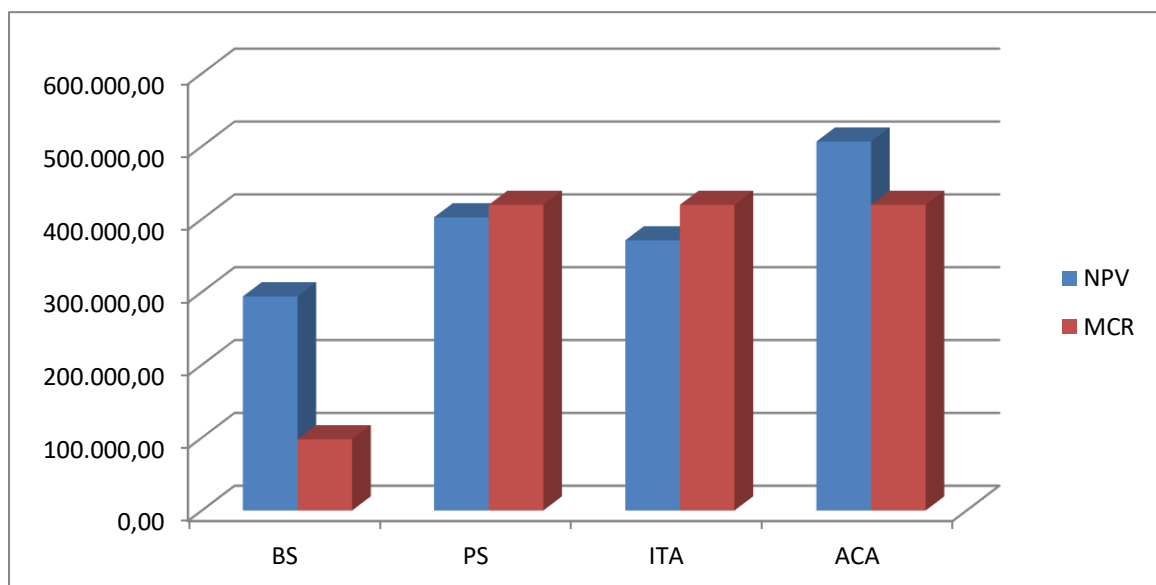
Figure 1: The chart of NPV and MCR which is affected by Government incentives in 2010
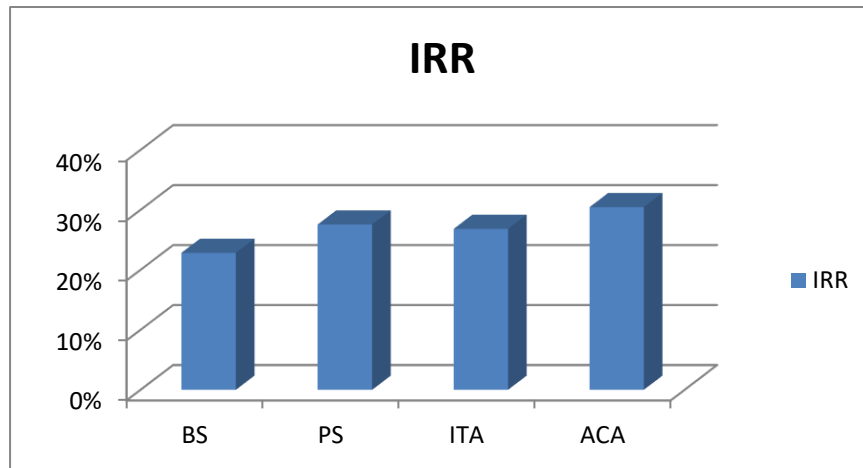
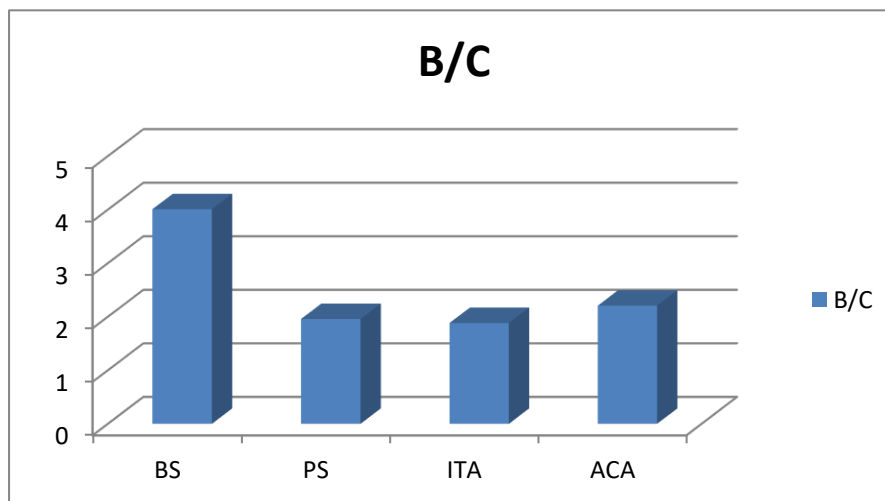*Figure 2: The chart of IRR which is affected by Government incentives in 2010.*

Figure 3: The chart of Benefit Cost Ratio which is affected by Government incentives in 2010.

4. CONCLUSION

The study compared the effects of government incentives on the profitability of brackish water farms project evaluation indicators. The government provides incentives for agriculture and agro based industries to increase food production in Malaysia [9]. The three most popular incentives in an agriculture project were discussed and evaluated. Farmers cannot apply for both incentives, they must choose between pioneer status (PS) and investment tax allowance (ITA). Since, NPV is higher in PS than ITA the shrimp and Grouper operators should choose pioneer status instead of ITA. Then, after incorporating the ACA incentive, the NPV were even higher. From this study, we can conclude that the PS with ACA on prawn farms and ITA with ACA on Barramundi farms than they would give a higher profit to the company. In other words, brackish water farmers should apply for PS or ITA plus ACA incentives. However, the situations are only applicable to tax paying operators because the incentives are all in terms of tax rebate.

LITERATURE:
1. FAO. (2011). *Regional review on aquaculture in the Asia-Pacific: trends and prospects* (Report NO. 1061/5). Rome & Bangkok: FAO Fisheries and Aquaculture Department, Network of Aquaculture Centres in Asia-Pacific (NACA).
2. FAO. (2009). The State of World Fisheries and Aquaculture Retrieved 28 July, 2010, from www.fao.org/docrep/011/i0250e/i0250e00.htm.
3. FAO. (2006). *The state of world fisheries and aquaculture (SOFIA)* (Report No.504, 85-87). Rome, Italy: Food and Agriculture Organization of the United Nation.
4. Seyednezhadfahim S.R., Eghdami E., Yosefnezhad S. and Maleki M., Investigating the Procedure of Financial Factors in Successful Companies. *Res. J. Recent Sci.,* 2(3), 44-48 (2013).
5. Affendy H., Tan M.S., Assis K. and Mohammad Amizi A. (2013) Economic Viability of *Tectona grandis* sole Cropping and Intercropping for 20 years Planting Project, *Research Journal of Agriculture and Forestry Sciences,* Vol. 1(3), 1-5.
6. FIGIS 2006. Global Aquaculture production 1950-2004. Food and Agriculture Organization of the United Nations, Rome.
7. Nawazish M, Ayesha A, Syed Kumail A. R. and Bushra N., Can Current Earnings Predict Future Cash Flows? A Literature Survey, *Res. J. Recent Sci.,* 2(2), 76-80 (2013)
8. Rasoul B. H., Samad T. Karim E and Shima K., Evaluating Effects of Financial Leverage on Future Stock Value at Stock Exchange. *Res. J. Recent Sci.,* 2(2), 81-84 (2013)
9. Ministry of Fisheries Malaysia. 2003. Conference Report: National Conference on Management of Coastal Fisheries in Malaysia. 11-12 March 2003. Kuala Lumpur, Malaysia. Department of Fisheries Malaysia and WorldFish Center.
10. Ministry of fisheries Malaysia, 2004. Portal Rasmi Jabatan Perikanan *Malaysia*. www.dof.gov.my.

HOW EFFECTIVE IS TAX POLICY IN ATTRACTING FOREIGN DIRECT INVESTMENTS IN SOUTH-EAST EUROPE?

Sabina Silajdzic
University of Sarajevo, School of Economics and Business, Bosnia and Herzegovina

Maida Obradovic
University of Sarajevo, School of Economics and Business, Bosnia and Herzegovina

Eldin Mehic
University of Sarajevo, School of Economics and Business, Bosnia and Herzegovina

ABSTRACT

Foreign Direct Investments (FDI) has been considered an important source of economic growth and technological development in transition economies. Previous empirical literature has shown that FDI promote economic growth via complementary effects on domestic investments, increases in productivity and overall economic efficiency, giving rise to an increasing interest in understanding the key determinants of FDI. Apart from traditional FDI determinants, favourable tax policy has been considered important factor influencing MNCs' locational decisions. In particular, FDI-related policy measures seem important rivalry tool, especially in the context of economies characterised by similar economic structures and patterns of economic transformation such as is the case of South-East European (SEE) transition countries. In view these similarities there is increasing interest among policy makers in creating favourable business environment and use available policy stances in promoting FDI in these countries. The increasing awareness on the importance of FDI among government officials has resulted in the development of FDI-specific policies and institutional setting depicted in OECD FDI institutional framework indices. Essentially, tax policy measures have been used as complementary tool in creating favourable environment for foreign investors. In recent years SEE countries have reduced corporate income tax and integrated a number of tax policy incentives. In an attempt to promote differentiated and attractive FDI environment SEE countries have put their tax related revenues and local firms at odds in view of the expected long term economic benefits associated with FDI related positive externalities. In view of this, the critical question becomes the one of the effectiveness of these tax policy measures in attracting FDI. The purpose of this paper is to examine the relevance of tax policy in promoting FDI in SEE. Specifically we investigate the impact of corporate income tax on FDI in SEE. Lower income tax is by and large found to be important determinant of FDI in countries at the lower level of technological development and industrial diversification as is the case of SEE countries. We rely on gravity econometric framework and examine the impact of tax policy on FDI using bilateral FDI flows between home and host countries in the period 2000-2015. The seven SEE host countries included in the sample are considered of similar economic structures and institutional transformation which seems important in analysing tax policy effectiveness and minimising biases associated with econometric modelling of FDI determinants. Finally, we study this relationship in an integrated framework considering traditional gravity forces as well as a number of additional FDI determinants including institutional factors. We show that although tax policy seems important determinant of FDI, its effect seems to be conditional on the level of technological development.
Keywords: FDI, corporate income tax, tax incentives, gravity model, transition economies

1. INTRODUCTION

Many countries try to attract foreign direct investments (hereinafter: FDI) in order to promote their economic development. FDI is considered as an important factor which can promote technological development, increase employment and raise economic growth. Host countries benefit from FDI through generating new jobs and new technologies positively affecting economic growth and employment. The key question then becomes one of key factors influencing FDI. According to Estrin and Uvalic (2013), SEE countries are characterized by three most important FDI determinants which encompass the size of a domestic economy, a distance between home and host countries and an institutional quality. In terms of the size of the domestic economy, SEE countries are relatively small except Romania, which GDP is found to positively affect FDI. Being a European Union member is suggested to positively affect FDI while being significantly distanced from main Western investors affects the attraction of FDI negatively. The third factor, institutional quality has an important impact on FDI inflows in SEE (Estrin & Uvalic, 2013; Silajdžić & Mehić, 2012). Dunning (1988) provides an overall theoretical framework where he elaborates on FDI determinants and the key elements in attracting or deterring FDI inflows. Importantly, Dunning (1988) developed a conceptual framework focusing on motives of FDI by analyzing reasons and strategies of multinational corporations' to invest abroad. In terms of motives for FDI he classified multinational enterprises (hereinafter: MNEs) as market seekers, natural resource seekers and as efficiency seekers. The first ones are oriented towards market size and growth of the host country. Market seekers take into consideration the market size and market growth in the host country where production technology is replicated. On the other side, natural resource seekers are focused on exploiting resources in a host country including natural resources as well as other resources such as labor that are often associated with cost efficiency. Notwithstanding this, MNEs classified as efficiency seekers are the most concentrated on technological and innovative capabilities and capacity of the host economy assumed to pose a significant competitive advantage. These investors are also concerned about economic policies, demand patterns, and institutional framework. Apart from common FDI determinants, tax policy is often considered important determinant of FDI particularly among developing countries and found to be an important determinant of FDI in transition economies. The role of taxation in transition economies as FDI determinant has been investigated by Bellak and Leibrecht (2009). They used gravity model with the application of effective average tax rates on the bilateral level in order to explain FDI flows to Central and Eastern European countries. Their study suggests that FDI is positively related to home and host market size but inversely related to unit labor costs and a distance between home and host countries. Similar findings are obtained by other (Djankov et al., 2010; Bénassy-Quéré et al., 2000). However, a number of studies found that low tax rates fail to attract FDI at a significant rate, while FDI investors are not encouraged with high corporate tax rates (Bénassy-Quéré, Fontagné, & Lahrèche-Révil, 2005). For instance, Bénassy-Quéré et al. (2005) find that the low tax rate has not been found as an important determinant of FDI inflows even though the increase in nominal and effective tax rate is negatively related to FDI. Similarly, Hunady and Orviska (2014) relying on panel data analysis found an insignificant impact of statutory and effective tax rate on FDI. They found other factors like labor costs and openness of the economy particularly influential on the FDI attractiveness. Notwithstanding this inconsistency in the empirical findings, it's worth emphasizing that tax system plays an important role in every country, especially in developing countries. Taxation is aimed at encouraging investment and inducing economic growth, while foreign direct investment with the usage of an appropriate policy framework is assumed to promote economic development, principally by enhancing technological upgrading of industries and promoting regional competition. According to OECD (2016) data, European countries have decreased corporate tax rates in the past few years (2000-2015).

It is evident that Balkan countries have the lowest tax rates comparing to developed EU countries, except Germany which rate decreased to 15%. Low tax rates are considered important tax incentives. Most European countries use taxation measures and keep lowering their tax rates. Most of the SEE countries have a flat corporate tax system and the lowest in Europe. The lowest tax rates belong to Bosnia and Herzegovina, Macedonia, Albania and Bulgaria while Croatia, Serbia, and Romania have the highest rates among SEE group of countries. Another characteristic is that these countries have not changed their tax rates to the significant extent through the years, especially from 2008, except in the case of Serbia. On the other side, developed countries and mainly EU countries in the past couple of years have changed taxes very often. A small number of studies exist on the importance of tax policy regime in attracting FDI covering South East European countries. This is why the purpose of this paper is to model the impact of corporate tax rates on FDI inward flows in SEE countries in the period 2000-2014. The region we want to investigate to a great extent was subject to political and economic insecurity and that is one of the reasons why we lack data for a longer period. This study differs from previous studies since it covers a longer period and examines complex aspects of tax policy as a determinant of FDI for a group of SEE countries. More specifically, we want to investigate if there is a significant impact of differences in corporate tax rates among the SEE countries on FDI. We rely on gravity econometric framework and examine the impact of tax policy on FDI using bilateral FDI flows between home and host countries in the period 2000-2015. The seven SEE host countries included in the sample are considered of similar economic structures and institutional transformation which seems important in analysing tax policy effectiveness and minimising biases associated with econometric modelling of FDI determinants. Finally, we study this relationship in an integrated framework considering traditional gravity forces as well as a number of additional FDI determinants including institutional factors. We show that although tax policy seems important determinant of FDI, its effect seems to be conditional on the level of technological development. This work is divided into four sections. The first section explains the evolution of the main FDI theories, at the same time explaining the importance of the Dunning's Paradigm as fundamental FDI theory. This section also describes the difference between traditional FDI determinants and FDI determinants in transition economies. The second section describes the role of and the structure of corporate income taxes. The main emphasis is put on the explanation of the effect of corporate tax rates on FDI inflows by reviewing available literature. The fourth section explains the methodology used for examining the impact of corporate tax rates on FDI in SEE region and discusses the results. The results point to the importance of corporate income tax in understanding the FDI inflows to SEE transition countries. The conclusions and policy implications follows.

2. DETERMINANTS OF FDI AND THE ROLE OF TAXATION: THEORETICAL FRAMEWORK

Multinational corporations need to decide in which country to place their FDI activities. As denoted by Dunning (1988) and his paradigm on location specific advantages, MNE will undertake FDI activities if it recognizes the possibility of combining transportable semi-finished products from home country with immovable factor endowments or with other semi-finished goods in host country. In order to engage in FDI activities abroad, foreign country's factor endowments need to be attractive for investment as well as to lack the comparative advantage which will make MNE competitive over local enterprises. These conditions are extremely important for making a decision whether to export or invest. If the home country can make profit from comparative advantage in terms of low cost materials and easy accessible resources necessary for the production, then its decision will rely on exporting (Dunning, 1988).

On the other hand, in order to avoid international trade barriers like tariffs and quotas on imports and to bring profit, companies tend to associate company's specific advantages with host country's location advantages. Therefore, foreign affiliates as a result of FDI activities are more reasonable undertaking for greater profit. Location specific advantages mostly depend on the host country, but MNEs can benefit if they use them efficiently (Dunning, 1988). Location specific advantages can be classified into four categories as follows: natural resources advantages, economic environment advantages, political power and legal environment and cultural and social advantages. Taking into account the first group, MNEs can benefit from distribution of natural and produced resources like energy, geographical location and raw materials. As far as the economic environment advantages, MNEs can benefit from lower prices of inputs, intermediate goods, low cost of skilled labor, market size, low communication and transportation costs along with centralized research and development production. Also, economic advantages include trade barriers (quotas and tariffs) as investment incentives. Cultural and social advantages like language similarities, distance proximity between home and host country and societal advantages like education can contribute MNEs to be better off. Moreover, political stability, institutional framework, sustainable economy along with favorable FDI policies can bring advantage to investment activities of MNEs. MNEs' main drivers for FDI location decisions in the host country are factor endowments and strategic planning of international production (Dunning, 1993). There are numerous hypotheses which endeavor to clarify the determinants of FDI. Most authors that work on topics related to FDI tend to rely on Dunning's research. Importantly, Dunning (1988) developed a conceptual framework focusing on motives of FDI by analyzing reasons and strategies of multinational corporations to invest abroad. In terms of motives for FDI he classified MNEs as market seekers, natural resource seekers and as efficiency seekers. The goal of market-seeking FDI is to assist regional and local markets. This type of FDI is also known as horizontal FDI because production technology is replicated in the host economy. One of the variations of this form of FDI is tariff-jumping or export-substituting. The focus of horizontal FDI are local markets, local production along with market growth of the host country. Additionally, tariffs and barriers to trade, as hurdles to local market access, play the encouraging roles for horizontal FDI (Dunning, 1993). Resource-seeking type of FDI can be described by exploiting host economies' natural resources not accessible to home economies including low-cost labor. This type of FDI is focused on investment in manufacturing sector for the export purposes considering cost-efficiency as the main driver. Resource-seeking type or vertical type differs from horizontal type in relocation of production chain parts from home to host country.The main force of vertical FDI is low cost of labor force. Countries with the abundant natural resources tend to attract more FDI, especially those countries enriched with oil and gas (Dunning, 1993). Efficiency seekers, as third type of FDI, are the most concentrated on technological and innovative capabilities of the host economy which demonstrate a significant competitive advantage. Efficiency seekers MNEs tend to set their companies where economies of scale and scope exist also taking into consideration about institutional framework and economic policies (Dunning, 1993). With respect to the importance of taxation in considering investment location decisions, it need be said that taxation affects cost structures of multinational investment, and it affects MNC's investment decisions across all three types of FDI. In the long run, investment affected by corporate tax rate may have impact on the output prices and wages. Over time, a decline in the output which may come as a result of high incidence of corporate income tax in corporate sector compared to non-corporate sector causes the increase in the supply of goods, which results in increase in prices of goods in corporate sector. An increase in prices of goods produced by corporate sector affects income of households due to large portion of corporate sector being consumed. Given the reductions in labor and capital inputs usage in corporate sector due to corporate tax effect, wages of labor force tend to decline in the long run.

Such changes in corporate sector might not cause a shift of labor to non-corporate sector which depends on the elasticity of substitution in production of factors in both sectors (Hyman, 2011). MNEs' decisions on location in CEE countries are influenced by different set of measures proposed by governments. In order to form attractive location factors for future investors, governments offer fiscal and non-fiscal incentives. In this paper, the accent is put on corporate taxation because of its possible impact on location decisions and FDI's profitability. Taxation is aimed at encouraging investment and inducing economic growth, while foreign direct investment with the usage of an appropriate policy framework is assumed to promote economic development, principally by enhancing technological upgrading of industries and promoting regional competition.

3. THE ROLE OF TAXATION IN ATTRACTING FDI
Empirical studies reveal mixed results on the effects of corporate taxation on FDI. In addition, results from studies focusing on CEE countries suggests a significant increase in investment coming from EU and U.S. given the lower corporate income tax in these countries compared to more developed Western countries. Notwithstanding this, considering the relationship between corporate taxation and FDI, many authors conclude that there is a positive effect of reduced corporate tax rates on FDI. The impact of reduced corporate income tax has been a part of policy debate for a long time. Boskin and Gale (1987) conducted the research which indicates that corporate taxation affects the location of FDI. Similarly, Boskin and Gale (1987) found that FDI would decrease by about 2.9% on average if corporate tax rate increases by 1%. Gropp and Kostial (2000) applied panel data analysis on 19 OECD countries covering period from 1988 until 1997. The authors examined the relationship between corporate tax and FDI as well as between corporate tax revenues and FDI. The results of these estimations reveal a significantly negative impact of corporate tax increases on FDI inflows. Devereux and Freeman (1995) based their analysis on panel bilateral FDI flows between seven OECD's countries and estimated the effect of EMTR on FDI inflows in the period from 1984to 1989. The authors find that taxation does affect location of outward FDI flows. However, they find no evidence that the taxation affects the choice between investing abroad and investing home. Tax credit in the form of tax incentives given to foreign shareholders is also found to significantly impact inward FDI. In their empirical analysis, Bellak and Leibrecht (2005) used effective tax rates to investigate its impact on bilateral flows between eight CEE countries and seven investor countries. Using panel gravity model, the authors examined relationship between taxation and FDI flows focusing on the period from 1995 until 2003. Estimation results revealed negative impact of corporate taxation, distance and unit labor costs on FDI inflows.Positive and significanteffect is found for market size and privatizationthat seem importantdeterminants of FDI in transition economies. In one of their studies Benassy, Fontagne and Lahreche-Revil (2000) examined the effect ofnominal and effective tax rates on FDI flows in number of OECD countries. The results of their econometric analysis suggest significant impact of both nominal and effective tax rate on inward FDI in selected countries. The results are robust to controlling for the effects of tax exemptions or tax credits. Moreover, the results of their simulation analysis revealed that tax competition among EU member states is potentially beneficial to inward FDI, while generalisation of tax exemption schemes may also lead to increases in inward FDI flows in EU countries. Another study of Benassy, Fontagne and Lahreche-Revil (2005) examined bilateral FDI flows and corporate tax rates between 11 OECD countries in the period between 1984 and 2000 using panel regression. The regression reveals that high levels of corporate tax rates exert to have negative impact on FDI inflows even when gravity factors are being controlled. There is notable impact of corporate tax differentials on FDI besides already known market potential influence. This is in the line with previous research which also indicates a positive effect of the size of the parent country on FDI outflows indicating potential of big

countries to place their investment abroad. The same study shows an expected negative sign of distance variable without being significant given its p-value (Benassy, Fontagne, & Lahreche-Revil, 2003). Thus, it is evident disproportional impact of tax differentials on FDI whereas lower tax rates tend to fail in attraction of foreign investors, while higher corporate tax rates deter FDI to host countries. Positive tax differentials have heterogeneousimpact in countries oriented on exporting capital due to double taxation agreements. Consequently large tax differentials are associated with higher outward FDI. On the other side narrow tax differentials tend to have, though notsubstantial, but still discouraging effect on FDI inflows. Their previous study reveals the same results indicating a decrease in FDI inflows by 4.22% if the host STR increases by 1 percentage point. Accordingly to this study, tax differentials play significant role in FDI location decisions. Some countries may face alterations in market potentials whereas tax differentials can compensate disadvantage in market potential through lower STR (Benassy et al., 2003). In order to improve our understanding on the taxation effect, Wolff (2007) investigates the impact of taxes and market size on FDI. The regression without time and country controls shows that host corporate tax reduces FDI inflows, especially investments in equity. On the other hand, high home country taxes increase the probability of FDI inflow because they reduce set-up costs born in the home country. However, after including time and country controls, regression results show insignificant coefficient for home and host tax rates and their influence on equity FDI. However, empirical findings for the sample of enlarged EU countries show that even after controlling for country dummies, statutory tax rate appear to be significant for the allocation of profits in the EU. Hansson and Olofsdotter (2010) empirically estimated effects of corporate taxation and agglomeration process on bilateral FDI stock and flows within the old and new EU member states. The study covers 27 EU member states in the period between 1995 and 2006. Similar to analysis of Razin and Sadka (2006) authors follow the model of two-fold decisions based on questions whether to invest and how much to invest. Thus one of the findings shows big discrepancy of factors determining FDI between the new and the old EU members (Razin & Sadka, 2006). Hansson and Olofsdotter (2010) find that FDI flows of new member countries are affected by tax differentials. They find that the obtained coefficients of tax differential variables suggest that a 4% reduction in FDI flows is associated by1 percentage point increase in tax differentials. Moreover, the decision of how much to invest is more sensitive to tax differentials than the decision where to invest. The study also reveals that EMTR has highereffect on FDI compared toSTR (Hansson &Olofsdotter, 2010).

4. EMPIRICAL ANALYSIS
4.1. The model
The empirical analysis is based on a panel gravity model. We use the Ordinary Least Squares (OLS) econometric framework to analyze the determinants of FDI in transition countries. The study encompasses eight transition SEE host countries j: Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Macedonia, Montenegro; Romania and Serbian and eight major trade partners denoted as home countries i: Austria, Germany, Italy, Netherlands, France, Slovenia, Switzerland and Turkey. The data covers bilateral FDI flows between host and home countries in the period between 2000 and 2015. The data on bilateral FDI flows prior to 2000 are not available for the SEE sample of countries. We developed a baseline specification:

$$\ln FDI_{ijt} = \beta_0 + \beta_1 \ln GDP_{it} + \beta_2 \ln GDP_{jt} + \beta_3 DIST_{ijt} + \beta_4 C\_TAX_{jt} + \beta_5 INFL_{jt} + \beta_6 TradeO_{jt} + \beta_7 \ln WAGE_{jt} + \beta_8 INST_{jt} + Country + Time + \varepsilon_i \qquad (1)$$

where the dependent variable FDI_{ijt} indicates bilateral FDI flows between the selected host and home countries expressed as logarithm of FDI stock in period t; $\ln GDP_{it}$ indicates logarithm of gross domestic product of a home country i in period t; $\ln GDP_{jt}$ indicates a logarithm of gross

domestic product of a host country j in period t; $DIST_{ijt}$ indicates the distance between home and host countries; C_TAX_{jt} indicates corporate tax of a host country j in period t; $INFL_{jt}$ indicates inflation rate of a host country j in a period t; $TradeO_{jt}$ indicates openness to trade of a host country and it is expressed as share of total trade to GDP; $\ln WAGE_{jt}$ indicates a relative unit cost labor cost of a host country and is expressed as an average nominal wage in the manufacturing sector; where $INST_{jt}$ captures a range of institutional quality indicators developed by the World Bank (i.e. World Bank good governance indicators) considered important for well-functioning of national economies including: $CORUPT_{jti}$ indicates the level of corruption in a host country j in period t and $RoLaw_{jt}$ indicates the rule of law in a host country j in period t.; Country variable captures the specific effects of each individual bilateral FDI transaction between host and home countries, while Time captures time specific effects and ε_i indicates the error term. Following the gravity model assumptions we presuppose that FDI stock is positively related to GDP of host and home countries as the size of the economy and , and negatively related to the distance between host and home countries. Importantly, we postulate a negative relationship between corporate tax rate and FDI. We have also developed another baseline specification in which we replaced C_TAX_{jt} variable with C_TaxD_{ijt} which indicates the difference of tax rates between home country i and host country j in a period t:

$$\ln FDI_{ijt} = \beta_0 + \beta_1 \ln GDP_{it} + \beta_2 \ln GDP_{jt} + \beta_3 DIST_{ijt} + \beta_4 C\_TaxD_{ijt} + \beta_5 INFL_{jt} + \beta_6 TradeO_{jt}$$
$$+ \beta_7 \ln WAGE_{jt} + \beta_8 INST_{jt} + Country + Time + \varepsilon_i \qquad (2)$$

4.2. Data and variables

For this research, we use the log of FDI stock between host and home countries denoted in EUR. The advantage of FDI stock variable is that its value cannot be negative and avoids time anomalies, unlike FDI flows which null or negative values may affect the functional form of gravity equation. Thus, yearly FDI flows between transition countries vary with huge fluctuations resulting from process of privatisation that may not capture the effect of individual explanatory variables. The Vienna Institute for International Economic studies is source of data for bilateral FDI stock (WIIW). As a proxy for the market size, we have included GDP host denoted as GDP_i and GDP home denoted as GDP_j . Other control variables include distance denoted as DIST, wage denoted as $WAGE_j$, and inflation rate denoted as $INFL_j$, trade openness as $TradeO_j$. All these variables are found to be significant in number of other studies related to foreign direct investment (Bevan & Estrin, 2004). The proxy variable GDP home is used to reflect on the economic power of investor. Two outcomes can be expected considering home country market size. The first result is that source country can decide to place production on a single plant to utilize economies of scale and export. On the contrary, economies of scale can encourage source countries to set production abroad, closer to the markets by investing and establishing multinational companies (Bevan & Estrin, 2004). A vast majority of empirical studies find a positive relationship between home GDP and FDI in transition economies (Resmini, 2000). The host GDP variable in our model serves as a proxy for market size, which is expected to have a positive effect on FDI. Market size is location specific advantage for host country as the broader market appeals the placement of new products and affects investors' decision. That also depends on the dynamics of the market and its overall size (Resmini, 2000). In our study, distance is a proxy for geographical distance between capital cities of a home and host countries. We used CEPII database as a source. Distance is a time-invariant variable which is constant in its value. It is usually used to reflect trade costs (Carstensen & Toubal, 2004). Moreover, a distance can be used as a proxy for cultural differences, language, transportation and operating costs (Brenton, Di Mauro, & Lücke, 1999). According to Hansson and Olofsdotter (2010), distance has a negative effect on FDI. They also emphasize its ambiguity because, besides geographical distance, it is also used to reflect trade costs.

Another prospect for using distance is that it may reflect the cost of acquiring information or the obstacles in managing distant affiliates (Hansson & Olofsdotter, 2010). Previous empirical studies show that labor cost has neither statistically significant nor significantly adverse effect on FDI. Labor costs play a crucial role in labor-intensive industries as a lower labor cost tends to attract more investment. Studies suggest a twofold effect of labor costs. Carstensen and Toubal (2004), found a significantly negative effect of labor costs on FDI inflows which is in line with findings of Bevan and Estrin (2004) and Resmini (2000). On the contrary, Benassy et al. (2005) found statistically insignificant, but positive effect of labor costs on FDI. In our analysis, we assume that labor costs will have a negative sign. Also, our proxy for labor cost is average gross monthly wages in the logarithm form. We use UNECE as a source for labor cost data. In most empirical studies, inflation is used to reflect on macroeconomic stability of a host economy. It also reflects on a prudence of fiscal policy in general. Investors will be attracted by low inflation rate that implies stable macroeconomic conditions for low-risk investment. Unexpectedly, in his empirical study, Sato (2012) found a positive impact of inflation on FDI value, whereas he justifies it with the rise in prices as the economy expands vigorously. He also reflects that positive sign can explain positive future economic prospects of the host country that followed an increase in FDI inflows. However, high inflation rate can destabilize the economy and deter future investments. Our expectation in this analysis is that low inflation rate will cause FDI to increase. The source of this data is IMF database. The emphasis of this empirical investigation is put on the estimation of the effect of corporate income tax rate on FDI. We include two variables namely corporate tax rate denoted as C_Tax, and the difference between home and host corporate tax rates denoted as C_TaxD as principal variables of interest in this study corporate income tax presents the statutory income tax. The STR is usually used to proxy nominal tax burden on business. Its impact on FDI in the findings from Demekas et al. (2005) appears to be significantly negative while tax incentives seem to have a statistically insignificant effect on FDI. Sato (2012) and Bellak and Leibrecht (2005) investigated the impact of tax rate difference (between home and host countries) on FDI and presuppose its effect to be significant and positive indicating the greater the difference the higher the FDI inflows. The tax difference between corporate tax rates refers to the variation of corporate tax rates between home and the host country. Sato (2012) indicates that the larger the value of tax difference the lesser the investment inflows. Investigating bilateral inflows, Bellak and Leibrech (2009) also find an adverse effect of tax difference on FDI. We expect an adverse effect of corporate tax rate on FDI, and a positive effect of the tax difference variable on FDI. We use OECD tax database as a source of corporate tax rate data. Being aware of importance of institutional quality we use two institutional variables to approximate the effect of institutions on FDI inflows. Rule of law takes into account the effectiveness of judicial system, the enforcement of law and the incidence of crime. Control of corruption considers different corruption indicators. According to Wernick et al. (2009), control of corruption presents the level of exposure of public goods to citizens. Reduced uncertainty in business activities and low presence of corruptive activities tend to encourage FDI inflows. These two variables encompass mutual respect of government and citizens towards institutions which consequently handle their conflicts and interactions (Kaufmann et al., 1999). Data on corruption and rule of law are sourced by the World Bank dataset. The variables are expressed as estimates with values between -2.5 and 2.5. A proximity to greater value indicates a strong institutional quality, and therefore the positive and significant coefficients are expected. Table 1 presents the descriptive statistics of variables.

Table following on the next page

Table 1: Descriptive statistics

Variable	Obs	Mean	Std.Dev.	Min	Max
log FDI	894	5.396645	2.095897	-4.60517	9.686512
Log GDP home	1024	27.18089	1.339638	23.73596	28.98383
Log GDP host	1024	23.62447	1.213349	20.70742	26.06168
Distance	1024	1042.864	411.7282	117.3451	1875.018
C_Tax	1024	16.15625	6.560866	9	35
INFL	1024	5.632422	11.37443	-2.167	111.959
TradeO	1016	88.80569	18.58774	24.17033	134.5345
LogWage	832	6.187655	0.656363	4.241327	7.336937
CORUPT	944	-0.2860335	0.2592477	-1.122741	0.2485663
RoLaw	944	-0.2779278	0.3173644	-1.343226	0.310605

4.3. Method of investigation

We estimate the regression using Prais-Winsten correlated panels corrected standard errors PSCE method. In this analysis we deeply consider an appropriate estimation method to obtain robust estimates of individual effects in presence of heteroscedasticity and serial correlation. We treat the problems of encountered heteroscedasticity and serial correlation, with courteousness. In an attempt to compute heteroscedasticity-robust standard errors and eliminate serial dependence in times series we follow Plümper et al.'s (2005) recommended technique, and use a combination of panel-corrected standard errors with Prais-Winsten transformation (AR1). Specifically, here we follow Beck and Katz's (1995) recommended procedure and use panel-corrected standard errors, with corrections for first-order auto-regression, and imposition of a common rho for all cross-sections.

5. RESULTS

Table 2 report the results of econometric analysis.

Table following on the next page

Table2: Results of Prais-Winsten Regressions

	Model 1	Model 2	Model 3	Model 4
GDP home	0.388***	0.388***	0.343***	0.343***
	(0.055)	(0.045)	(0.0433)	(0.0424)
GDP host	-0.326	-0.375	-0.514	-0.645
	(0.384)	(0.369)	(0.537)	(0.473)
Distance	-0.001***	-0.001***	-0.001***	-0.001***
	(0.000)	(0.000)	(0.000)	(0.000)
Corporate tax	-0.014***	-0.012***		
	(0.002)	(0.001)		
Inflation	-0.021***	-0.015***	-0.023***	-0.018***
	(0.003)	(0.003)	(0.005)	(0.005)
Trade Openness	0.011***	0.013***	0.010*	0.012***
	(0.003)	(0.003)	(0.004)	(0.003)
Wage	0.591	1.002**	0.743	1.063**
	(0.377)	(0.334)	(0.422)	(0.338)
Tax difference			0.011*	0.010*
			(0.004)	(0.004)
Control of Corruption	0.835***		0.752**	
	(0.250)		(0.262)	
Rule of Law		0.957***		0.856**
		(0.254)		(0.267)
N	685	685	685	685
R2	0.446	0.342	0.447	0.449

Notes: Standard errors are given in brackets (PCSE); All regressions include a constant and country dummies (not reported in the table)., ***denotes statistical significance at the level of 1%; **denotes statistical significance at the level of 5%; *denotes statistical significance at the level of 10%;

Table 2 presents the results of econometric analysis. Specifically, the table reports OLS fixed-effect panel data estimates with PCSE panel-corrected standard errors. Overall, all variables included in the model are of the expected sign and significance (with the exception of GDP host variable which is not found to be significant). We find that home size proxied by GDP variable has significant and positive influence on FDI inflows albeit significant at 1% level, and that all gravity model variables have the expected sign and significance. The distance variable is negative and significant at 1%, suggesting that the lesser the distance the higher are the FDI inflows. The closer the countries the lower transaction and distribution costs that attract more FDI in transition countries. The results of estimations reveal positive and statistically significant coefficient of labor cost at 1% level of significance (Model 2 and 4) suggesting that higher labor costs are associated with higher FDI inflows, probably depicting higher productivity levels. The results shows that inflation rate is statistically significant at 1% with negative sign suggesting that the lower the inflation rate the greater are FDI inflows, which is in line with previous

findings. Essentially the corporate income tax rate, turns out to be statistically significant at 1% indicating that lower corporate tax rate positively affect FDI, as a priori expected. In the Model 3 and 4, we estimated the impact of tax difference on FDI which rise by 1% appears to be associated with an increase in FDI inflows by about 1.1%. Unexpectedly, trade openness appears insignificant in models estimated, with the exception of estimations using institutional variables. This variable, according to previous studies, plays very important role in attracting FDI and presents one of the main determinants of FDI. Regarding institutional variables, it seems that specific institutional characteristics of host economies do affect increase in FDI flows significantly, with the notable exception of the government effectiveness variable in the Model 4. It seems that quality of policy implementation, public services or independence from political pressures has no effect on FDI inflows. On the other side, the control of corruption and the rule of law seem important in explaining the variations in cross-country FDI inflows in transition context. These results could demonstrate that quality of institutions play significant role in multinationals' decision to invest given the similarity of economic and industrial features across the region. Thereby, the quality of institutions and policy improvements can possibly counteract low productivity in SEE countries.

6. CONCLUSION

This study attempts to investigate the impacts of corporate tax rate and tax incentives in attracting FDI across South-East European countries. In the view of this, the study reviews relevant literature referring to FDI determinants in the context of developed and developing countries. Theory states that in transition economies, FDI stimulate economic growth through technological spillover effect. Moreover, FDI enhances economic development through technological development and increased employment. For that reason, governments apply fiscal policies in order to attract foreign capital from investors. Correspondingly, one of the taxation instruments that governments use is the corporate income tax rate. It is assumed that corporate taxation affects location decisions of MNEs. Therefore, governments reduce corporate tax rate in order to increase FDI inflows by multinationals. Furthermore, based on the regression results of the model, hypothesis is consistent with the theory. Tax policy is often considered important determinant of FDI particularly among developing countries and found to be an important determinant of FDI in transition economies. It is important that governments provide favorable investment environment through taxation policies that will encourage foreign direct investment. Nowadays, developed European countries follow the trend of lowering tax rates because of tax competition while developing countries compete over tax incentives in order to attract FDI having their corporate tax rate low. In addition to this, SEE countries maintain the lowest corporate tax rates in Europe. Our results show that the corporate income tax rate turns out to be statistically significant indicating that lower corporate tax rate positively affects FDI. According to the obtained results, a 1% increase in the corporate tax rate would reduce FDI by about 2.5%. We estimated the impact of tax difference on FDI which rise by 1% appears to be associated with an increase in FDI inflows by about 1.6%. SEE countries have undertaken many structural reforms like privatization and liberalization and introduced fiscal and non-fiscal incentives in order to promote FDI. Among the incentives provided, tax holiday and tax credit are the most popular. Following the provided reforms and tax incentives, FDI in particular has shown a substantial increase. The results of our empirical research indicate that countries which impose tax holiday as tax incentive have higher FDI inflows by about 26% on average compared to countries and or period in which countries did not credit tax holidays to foreign investors. This result is an important finding that FDI policies affect FDI differences across SEE countries. The empirical evidence from the reviewed literature identifies market size, inflation, labor costs and trade openness as main macroeconomic and non-institutional factors for investment decisions.

From non-tax factors, home and host market size proxied by GDP variable have significant and positive influence on FDI inflows. The results also suggest that inflation rate is statistically significant at 1% with negative sign suggesting that the lower the inflation rate the greater are FDI inflows, which is in line with previous findings. The results of these estimations reveal positive and statistically significant coefficient of labor cost suggesting that higher labor costs are associated with higher FDI inflows, probably depicting higher productivity levels. Trade openness did not appear to be significant in our estimation model although previous studies find it as important FDI determinant. Apart from macroeconomic factors, institutional factors may have influence MNEs' decision to invest. It is expected that lower influence of public authorities enhances an increase in the investment. The comparison of the findings from various studies indicates that political stability and institutional quality play a significant role in attracting FDI besides high corporate tax rates. The most influential institutional indicators are government effectiveness, rule of law and the control of corruption. Government effectiveness, defined by the way of functioning of bureaucracy, and the level of corruption are viewed as important factors for foreign investors, but not always significant. Our estimation reveals that the control of corruption and the rule of law, with the exception of government effectiveness, seem important in explaining the variations in cross-country FDI inflows in transition countries. Along with institutional determinants, privatization plays significant role in defining the location of FDI as it impacts the size and the structure of private sector. Additionally, EU members tend to attract more FDI mainly due to the quality of their institutional indicators. Moreover, some authors find that institutional quality speeds up the process of joining the EU. Thus, it is clear that announcement of joining the EU itself leads to a greater share of FDI inflows. Rojec and Penev (2011) advice that best policy for attracting FDI is to join EU, given the importance and the quality of institutional factors found in their study. Given the quality of EU institutions it is evident that EU membership improves the institutional quality and enhances favorable economic and political environment that foreign investors consider reliable for investment decisions.

LITERATURE:
1. Beck, N., & Katz, J. N. (1995). What to do (and not to do) with time-series cross-section data. *American political science review*, *89*(03), 634-647.
2. Bellak, C., Leibrecht, M., & Damijan, J. P. (2009). Infrastructure endowment and corporate income taxes as determinants of foreign direct investment in Central and Eastern European countries. *The World Economy*, *32*(2), 267-290.
3. Bellak, C., Leibrecht, M., & Damijan, J. P. (2009). Infrastructure endowment and corporate income taxes as determinants of foreign direct investment in Central and Eastern European countries. *The World Economy*, *32*(2), 267-290.
4. Bènassy-Quéré, A., Fontagné, L., & Lahrèche-Révil, A. (2000). *Foreign direct investment and the prospects for tax co-ordination in Europe*. Paris: CEPII.
5. Bénassy-Quéré, A., Fontagné, L., & Lahrèche-Révil, A. (2003). *Tax competition and foreign direct investment*. Paris: CEPII.
6. Bénassy-Quéré, A., Fontagné, L., & Lahrèche-Révil, A. (2005). How does FDI react to corporate taxation? *International Tax and Public Finance*, *12*(5), 583-603.
7. Bevan, A. A., & Estrin, S. (2004). The determinants of foreign direct investment into European transition economies. *Journal of comparative economics*, *32*(4), 775-787.
8. Boskin, M. & Gale, W. (1987). New Results on the Effects of Tax Policy on the International Location of Investment. In *The Effects of Taxation on Capital Accumulation* (pp. 201-222). Chicago, USA: University of Chicago Press.

9. Brenton, P., Di Mauro, F., & Lücke, M. (1999). Economic integration and FDI: An empirical analysis of foreign investment in the EU and in Central and Eastern Europe. *Empirica*, *26*(2), 95-121.
10. Carstensen, K., & Toubal, F. (2004). Foreign direct investment in Central and Eastern European countries: a dynamic panel analysis. *Journal of comparative economics*, *32*(1), 3-22.
11. Djankov, S., Ganser, T., McLiesh, C., Ramalho, R., & Shleifer, A. (2010). The effect of corporate taxes on investment and entrepreneurship. *American Economic Journal: Macroeconomics*, *2*(3), 31-64.
12. Dunning, J. H. (1988). The eclectic paradigm of international production: A restatement and some possible extensions. *Journal of international business studies*, *19*(1), 1-31.
13. Dunning, J. H. (1993). *Multinational enterprises and the global economy.* New York: Addison-Wesley.
14. Estrin, S., & Uvalic, M. (2013). Foreign direct investment into transition economies: Are the Balkans different? *London School of Economics and Political Science,* LEQS Paper 64. London: LSE Library.
15. Gropp, M. R., & Kostial, M. K. (2000). *The disappearing tax base: is foreign direct investment (FDI) eroding corporate income taxes?* (No. 0-173). International Monetary Fund.
16. Hansson, Å., & Olofsdotter, K. (2010). Tax differences and foreign direct investment in the EU27. *Lund University Working Paper*, *3*. Lund: Department of Economics.
17. Hyman, D. N. (2014). *Public finance: A contemporary application of theory to policy*. North Carolina State University: Cengage Learning.
18. Kaufmann, D., Kraay, A., & Zoido-Lobatón, P. (1999). *Aggregating governance indicators* (Vol. 2195). World Bank, Development Research Group, Macroeconomics and Growth, and World Bank Institute, Governance, Regulation, and Finance.
19. OECD. (2016). *Corporate Income Tax: Corporate income tax rates (Edition 2016), OECD Tax Statistics (database).* Obtained on February 6, 2018 from http://dx.doi.org/10.1787/7cde787f-en
20. Resmini, L. (2000). The determinants of foreign direct investment in the CEECs: new evidence from sectoral patterns. *Economics of transition*, *8*(3), 665-689.
21. Sato, T. (2012). Empirical analysis of corporate tax and foreign direct investment. *Public Policy Review*, *8*(1), 1-20.
22. Silajdžić, S. & Mehić, E. (2012). How Important Are Institutions In Promoting Foreign Direct Investment In Transition Economies?: Evidence From Southeast European Economies. *6th International Conference of the School of Economics and Business. Beyond the Economic Crisis: Lessons Learned and Challenges Ahead* (pp.746-766). Sarajevo: University of Sarajevo, School of Economics and Business
23. Silajdzic, S., & Mehic, E. (2016). Absorptive Capabilities, FDI, and Economic Growth in Transition Economies. *Emerging Markets Finance and Trade*, *52*(4), 904-922.
24. Wernick, D. A., Haar, J., & Singh, S. (2009). Do governing institutions affect foreign direct investment inflows? New evidence from emerging economies. *International Journal of Economics and Business Research*, *1*(3), 317-332.
25. Wolff, G. B. (2007). Foreign direct investment in the enlarged EU: do taxes matter and to what extent? *Open Economies Review*, *18*(3), 327-346.

DIRECTIONAL INPUT DISTANCE FUNCTION TECHNICAL EFFICIENCY OF CHILI PRODUCTION IN THAILAND: PARAMETRIC APPROACH

Wirat Krasachat

Faculty of Administration and Management, King Mongkut's Institute of Technology Ladkrabang, Thailand
kkwirat@kmitl.ac.th

ABSTRACT

The primary purpose of this study is to measure technical efficiency of chili farms in Thailand. This study applies an input distance function to measure farm-specific technical efficiency using the 2012 farm-level cross-sectional survey data of Thai chili farms and stochastic frontier method. The sample of 107 farms includes good agricultural practice (GAP) farms as well as conventional (i.e, non-adopting GAP) farms. Some of these farms grow chili in dry season while others grow it in rainy season. The empirical results suggest two important findings. First, there is confirmation that the differences in variety and GAP used have influenced the technical inefficiency of chili farms. Second, farm size also has different impacts on technical inefficiency in Thai chili production in different farms.
Keywords: Chili farm, Good agricultural practice, Input distance function, Technical efficiency, Stochastc frontier

1. INTRODUCTION

Chili is a high value crop and also a major source of income for small scale farmers in Thailand (Athipanyakul and Pak-Uthai, 2012). In 2013, 55,766 hectares were planted to chili (Ministry of Agriculture and Cooperatives, 2014). However, chili farmers have overused pesticides both pre and post-harvest to control pests, protect the crops from disease, and meet high production targets (Athipanyakul and Pak-Uthai, 2012). To reduce the use of pesticides, good agricultural practice (GAP) has been promoted in the fruit and vegetables production system (including chili) in Thailand since 2003 by the Ministry of Agriculture and Cooperatives. As mentioned in Krasachat (2017), production improvement is the main concern of this sector. There are at least three causes for worry concerning the future development of chili production in Thailand. First, Chili is normally cultivated by small farmers. Second, the Thai government has significantly influenced Thai agriculture through a variety of policies over the past three decades. These could cause imperfect competition in those inputs and in output markets. Finally, as mentioned above, GAP has been promoted in the fruit and vegetables production system in Thailand. Because of the above factors, economists and policy makers have raised the question of the technical efficiency of chili production in Thailand, especially at farm level. The main purpose of this study is to measure and investigate factors affecting technical efficiency of chili farms in Thailand. Previous studies have investigated technical efficiency at both the farm and aggregate levels in Thai agriculture (e.g., Krasachat, 2000, 2001a, 2001b, 2004a, 2004b, 2008, Krasachat and Yaisawarng, 2018). However, this study, to the best of our knowledge, has been the first application of stochastic frontier input distance function in order to measure and explain technical efficiency of chili farms in Thailand. Valuable information on the technical efficiency is necessary for policy makers to enable them to choose the appropriate direction of development planning to increase productivity, food security, farmer well-being and to support Thailand 4.0 goal. This paper is organised into five sections. Following this introduction, the methodology is described. Next, data and their sources are described. The last two sections cover the empirical results of this study, and conclusion.

2. METHODOLOGY

As mentioned in Coelli, Rao, O'Donnell and Battese (2005), distance function can be employed to estimate the characteristics of multiple-output production technologies in cases where price information is not available. In addition, input distance functions tend to be applied instead of output distance functions when firms have more control over inpouts than outputs. Assume cross-sectional data on I firms can be accessed. An input distance function defined over M outputs and N inputs is as follows:

$$d_i^I = d^I(x_{1i,}, x_{1i,}, \dots x_{Ni,}, y_{1i,}, y_{1i,}, \dots y_{Mi,})$$ (1)

Where x_{ni} is the n-th input of firm i; y_{mi} is the m-th output; and $d_i^I \geq 1$ is the maximum amount by which the input vector can be radially contracted without changing the output vector. Coelli, Rao, O'Donnell and Battese (2005), among many others, indicated that the function $d_i^I(.)$ is non-decreasing, linearly homogeneous and concave in inputs, and non-increasing and quasi-concave in outputs.

In this study, the Cobb-Douglas functional form was used for econometric estimation of $d_i^I(.)$ because it states the log-distance as a linear function of the transformation of inputs and outputs. Thus, the log form of a Cobb-Douglas input distance function, for the case of one output and N inputs is specified as:

$$\ln d_i^I = \beta_0 + \phi \ln y_i + \sum_{n=1}^{N} \beta_n \ln x_{ni} + v_i$$ (2)

Where v_i is a random variable introduced to account for errors of approximation and other sources of statistical noise. Coelli, Rao, O'Donnell and Battese (2005) indicated that the fuction (2) is non-decreasing, linearly homogeneous and concave in inputs if $\beta_n \geq 0$ for all n and if

$$\sum_{n=1}^{N} \beta_n = 1.$$ (3)

Imposing (3) into (2) and re-arranging, the estimating equation as follows:

$$-\ln x_{Ni} = \beta_0 + \phi \ln y_i + \sum_{n=1}^{N-1} \beta_n \ln(x_{ni} / x_{Ni}) + v_i - \mu_i$$ (4)

where $\mu_i \equiv \ln d_i^I$ is a non-negative variable associated with technical inefficiency. Therefore, equation (4) results in a model that is in form of the stochastic production frontier model. The maximum likelihood technique can be used to estimate the parameter of the model. In addition, a radial input-oriented measure of technical efficiency is:

$$TE_i = \frac{1}{d_i^I} = exp(-\mu_i).$$ (5)

Thus, firm specific technical efficiency can be predicted (Coelli, Rao, O'Donnell and Battese, 2005).

To further explore the determinants of technical efficiency, Battese and Coelli (1995) indicated that the firm-specific factors should be incorporated directly in the estimation of the production frontier because they may have a direct impact on efficiency.

To overcome this problem, the parameters of the stochastic production frontier and the inefficiency model are estimated simultaneously given that the technical inefficiency effects are stochastic. In this case, the u_i are assumed to be non-negative random variables, independently distributed and arising from the truncation at zero of the normal distribution with variance, σ^2, and mean, $z_i\delta$, where z_i is a vector of firm-specific factors assumed to explain technical inefficiency and δ is a vector of parameters to be estimated (Wilson, Hadley, Ramsden and Kaltsas, 1998).

Thus, in this study, the stochastic input distance function of the Thai chili farms is specified as:

$$-\ln x_{4i} = \beta_0 + \phi \ln y_i + \sum_{n=1}^{3} \beta_n \ln(x_{ni}/x_{4i}) + v_i - \mu_i \qquad (6)$$

where y and x are variables as defined in Table 1. βs and ϕ are parameters to be estimated. Battese and Coelli (1992), Greene (1993) and Coelli, Rao, O'Donnell and Battese (2005) indicated that a random noise term, v_i, is assumed to be distributed as $N(0, \sigma_v^2)$ and u_i is a farm-specific inefficiency effect term assumed to be satisfied by the truncation (at zero) of the $N(\mu_i, \sigma_u^2)$. The firm-specific mean, μ_i, is specified as:

$$\mu_i = \delta_0 + \sum_{p=1}^{5} \delta_p z_i \qquad (4)$$

where the δs are parameters to be estimated and z_i is a vector of firm-specific factors assumed to explain technical inefficiency defined in Table 2.

Note that the maximum likelihood estimation proposed by Battese and Coelli (1995) is used to simultaneously estimate the parameters of the stochastic input distance function and the technical inefficiency effect model using the computer program, FRONTIER Version 4.1 described in Coelli (1996).

3. DATA

This study analyzes a sample of 107 owner-operated small chili farms in four districts of Chaiyaphoom province, Thailand during 2012 crop year. The sample consists of 42 GAP farms (i.e. farms that adopt GAP) and another 65 conventional farms (i.e., farms that do not adopt GAP). Fifty-seven farms grow chili in rainy season while forty-five farms do so in dry season. The sample is obtained from the interviews of farmers using structured questionnaire, conducted by a research team under the Thailand Research Grant TRG5380007 (Athipanyakul, 2012). One output and four inputs are used in the empirical application of this study. The four inputs groups are land, labour, chemical fertiliser, and "other inputs". Several farm-specific factors are analysed to assess their influence on productive efficiency. The variety variable is intended to examine the impact of differences in chili variety on the technical inefficiency of the chili farms in Thailand while a dummy variable introduced as proxy for good agricultural practice (GAP) is employed to investigate the effect of differences in farm practice on the inefficiencies of chili farms. The farmer's experience of cultivation is also defined in terms of years. In addition, a dummy variable introduced as proxy for farmer gender is employed to investigate the effect of gender differences on the inefficiencies of chili farms. Finally, a dummy variable introduced as proxy for farm size is used to examine the impact of differences in farm size on the technical inefficiency of the chili farms in Thailand.

The input and output variables are defined in Table 1 whilst the variables selected for use to investigate inefficiency effects and the summary statistics of data sample of all variables are in Tables 2 and 3, respectively.

Table 1: Variable definitions and measurement

Variables	Units	Definitions
Chili output (y)	Kilograms	Quantity of chili produced per farm
Land (x_1)	Rais	Land area planted per farm (1 rai = 0.16 hectare)
Labour (x_2)	Man days	Amount of total labour use from family and hired labour per farm
Fertiliser (x_3)	Kilograms	Quantity of chemical fertiliser used per farm
Other inputs (x_4)	Baht	Total costs incurred for using pesticide, herbicides, chili varieties and all variable expenses per farm, except the above inputs (34 Baht = US$ 1)

Table 2: Variable definitions for inefficiency effects

Variables	Definitions
VARIETY	Dummy variable with a value of one if producer used rainy season variety and zero otherwise
GAP	Dummy variable with a value of one if producer applied GAP and zero otherwise
EXPERIENCE	Producer's years of cultivation experience
GENDER	Dummy variable with a value of one if producer is male and zero otherwise
FARM SIZE	Dummy variable with a value of one if the planted area was more than two rais and zero otherwise

Table 3: Summary statistics of data sample

Variables	Minimum	Maximum	Mean	Std. Deviation
Chili output	120.70	6666.66	1567.25	1224.62
Land	0.25	10.00	1.87	1.48
Labour	19.75	267.50	64.72	41.93
fertiliser	0.003	295.00	77.19	51.47
Other inputs	4240.25	54575.73	15106.54	8010.81
VARIETY	0	1	0.56	0.49
GAP	0	1	0.39	0.49
EXPERIENCE	0	60	33.42	13.63
GENDER	0	1	0.43	0.49
FARM SIZE	0	1	0.16	0.37

4. EMPIRICAL RESULTS

The parameter estimates of the Cobb-Douglas input distance function and the technical inefficiency effects model are reported in Table 4. Most of the estimated parameters are at least twice their corresponding standard errors. This indicates that the goodness of fit of the model is good. Hypothesis test results are presented in Table 5. Likelihood ratio tests are used in both cases. In the first test, the null hypothesis explored specifies that each chili farm is operating on the technically efficient frontier and that the systematic and random technical inefficiency effects are zero.

It is rejected and this implies that inefficiency effects exist in Thai chili farms. The second test is to determine whether the variables included in the inefficiency effect model have no impact on the level of technical efficiency in Thai chili farms. This null hypothesis is also rejected confirming that the joint influence of the variables on technical inefficiency is statistically significant. The coefficient of output is significant and less than one in absolute value. This indicates increasing returns to scale in Thai chili farms.[1] The estimate of the variance ratio parameter, γ, is 0.999 and significant at the 1% level. This implies that the technical inefficiency effects are significant in Thai chili production.

Table 4: Maximum likelihood estimation results

Variables	Coefficients	Standard Errors
Stochastic frontier:		
Constant	0.252	0.650
lny	-0.421	0.044
lnx$_1$	0.499	0.049
lnx$_2$	0.194	0.036
lnx$_3$	0.118	0.032
lnx$_4$	<u>0.189</u>	
Inefficiency model:		
Constant	0.846	0.120
VARIETY	-0.613	0.083
GAP	-0.187	0.068
EXPERIENCE	0.001	0.002
GENDER	-0.131	0.066
FARM SIZE	0.269	0.103
Variance parameters:		
$\sigma_s^2 = \sigma_u^2 + \sigma_v^2$	0.057	0.008
$\gamma = \sigma_u^2 / \sigma_s^2$	0.999	0.050
Log-Likelihood	24.567	

Note: Underlined parameter is calculated by homogeneity conditions

Table 5: Likelihood ratio tests (at 5% significance)

Null Hypothesis	λ	Critical Value	Results
1. H$_0$: $\gamma = \delta_0 = ... = \delta_5 = 0$	72.25	14.07	Reject H$_0$
2. H$_0$: $\delta_1 = \delta_2 = ... = \delta_5 = 0$	71.49	11.07	Reject H$_0$

Following Coelli, Rao, O'Donnell and Battese (2005), the technical efficiency of *i*th farm is calculated and shown in Figure 1. The minimum estimated efficiency score is 0.21, the maximum score is 0.99 and the mean score is 0.62 with a standard deviation of 0.20. This indicates that there are possibilities to increase efficiency levels in Thai chili farms. Wilson, Hadley, Ramsden and Kaltsas (1998) indicated that, given the difference in efficiency levels among production units, it is valuable to question why some producers can achieve relatively high efficiency while others are technically less efficient. Variation in the technical efficiency of producers may arise from farm-specific socio-economic and management factors that impact the ability of the producer to adequately use the existing technology.

---

[1]In production studies, the regularly reported returns to scale elasticity is equal to the inverse of the negative of this estimated value. That is 1/0.421=2.375.

The parameter estimates for the inefficiency effect model shown in Table 4 suggest four important findings. First, the estimated coefficient of the variety variable is negative. This implies that producer who used rainy season variety achieved higher levels of technical efficiency. In other words, producers who used the rainy season variety are likely to get higher levels of technical efficiency in their farm management than those who did not. Second, the empirical results indicate that GAP has a negative effect on technical inefficiency. This suggests that farmers who applied GAP are more technically efficient than those who did not. Third, the estimated coefficient of farm size is positive. This implies that a bigger chili farm is likely to receive less technical efficiency than a smaller one. Finally, there is no confirmation that the differences in farm experience and gender have influenced the technical inefficiency of chili farms. This implies that the considerable variability of farm experience and gender does not have different impacts on technical efficiency in Thai chili production in different farms.
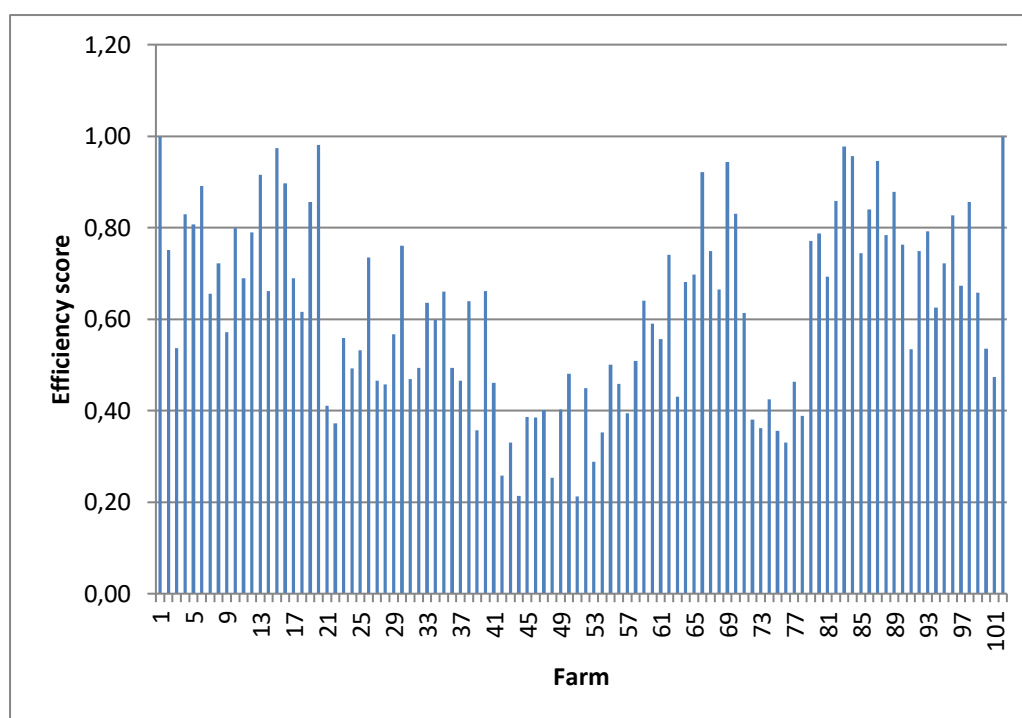

Figure 1: Predicted technical efficiency

5. CONSLUSION

This study applies a stochastic input distance function approach to measure farm-specific technical inefficiency using the 2012 farm-level cross-sectional survey data of Thai chili farms in a single estimation technique applying the maximum likelihood estimation method. The empirical results indicate that there are possibilities to increase efficiency levels in Thai chili farms. Producers who used rainy season variety and applied GAP achieved higher levels of technical efficiency. In addition, a bigger farm is likely to achieve less technical efficiency than a smaller one. However, there is no confirmation that the differences in farm experience and gender have influenced the technical inefficiency of chili farms. However, the results must be viewed with caution due to the small sample of the data set. The results indicate advantages in applying rainy season variety and GAP in Thai chili farms but they suggest disadvantages in the bigger farms. Therefore, development policies of the above areas should be used to increase the technical efficiencies of these inefficient farms in Thailand.

That is, the policies on training on GAP to increase famers' knowledge, suggesting the farmers to use the rainy season variety and informing the farmers to know about the disadvances of the large farms are recommended to increase technical efficiency in chili production in Thailand.

LITERATURE:
1. Athipanyakul, T. (2012) "Economic, Social and Behaviour Factors Affecting Farmers' Decisions to Adopt GAP Technology for Chili Production in Chaiyaphoom Province," Report submitted to Thailand Research Grant Office (in Thai).
2. Athipanyakul, T. and Pak-Uthai, W. (2012). 'Determinants of Good Agricultural Practices (GAP) Adoption in the Chili Production System in Northeastern Thailand: A case of Participatory Approach', *International Journal of Environmental and Rural Development*, Vol. 3, pp. 175-180.
3. Battese, G.E. and Coelli, T.J. (1992). 'Frontier Production Function, Technical Efficiency and Panel Data: With Application to Paddy Farmers in India.' *The Journal of Productivity Analysis* 3, pp. 153-169.
4. Battese, G.E. and Coelli, T.J. (1995). 'A Model of Technical Inefficiency Effects in a Stochastic Frontier Production Function for Panel Data,' *Empirical Economics*, Vol. 20, pp. 325-332.
5. Coelli, T.J. (1996). *A Guide to FRONTIER Version 4.1: A Computer Program for Stochastic Frontier Production and Cost Function Estimation.* CEPA Working Paper 96/07, University of New England, Armidale.
6. Coelli, T.J.; Rao, D.S.P., O'Donnell, C.J. and Battese, G.E. (2005). *An Introduction to Efficiency and Productivity Analysis (2nd Edition).* Springer, New York.
7. Greene, W.H. (1993) 'The Econometric Approach to Efficiency Analysis,' in Fried, H.O., Lovell, C.A.K. and S.S. Schmidt (eds), *The Measurement of Productive Efficiency: Techniques and Applications.* Oxford University Press, New York.
8. Krasachat, W. (2000). *Measurement of Technical Efficiency in Thai Agricultural Production*. Proceedings of the International Conference on the Chao Phraya Delta: Historical Development, Dynamics and Challenges of Thailand's Rice Bowl, December 12-15, Bangkok, Thailand.
9. Krasachat, W. (2001a).'Cost Efficiency in Thai Agricultural Production,' *Kasetsart Journal of Agricultural Economics*, Vol. 20, pp. 73-82.
10. Krasachat, W. (2001b). 'Performance Measurement of the Thai Oil Palm Farms: A Non-parametric Approach,' *Songklanakarin Journal of Science and Technology*, Vol. 23 (Suppl.), pp. 763-769.
11. Krasachat, W. (2004a). *Cost Efficiency of Rice Production in Thailand*, Proceedings of the Bangkok International Conference on Applied Business Research, December 1-3, Bangkok, Thailand.
12. Krasachat, W. (2004b) 'Technical Efficiencies of Rice Farms in Thailand: A Non-parametric Approach,' *The Journal of American Academy of Business, Cambridge*, Vol. 4, pp. 64-69.
13. Krasachat, W. (2008) 'Livestock Production Systems and Technical Inefficiency of Feedlot Cattle Farms in Thailand,' *Chulalongkorn Journal of Economics*, Vol. 20, pp. 141-154.
14. Krasachat, W. (2017). *Inefficiency of Chili Farms in Thailand*. Contributed Paper prepared for presentation at the 91st Annual Conference of the Agricultural Economics Society, the Royal Dublin Society, 24-26 April, Dublin, Ireland.
15. Krasachat, W. and Yaisawarng, S. (2018). Directional Distance Function Technical Efficiency of Chili Production in Thailand, unpublished paper.

16. Ministry of Agriculture and Cooperatives. (2014). *Agricultural Statistics of Thailand Crop Year 2013/14*, Centre for Agricultural Statistics, Bangkok.
17. Wilson, P., Hadley, D., Ramsden, S. and Kaltsas, I. (1998). 'Measuring and Explaining Efficiency in UK Potato Production,' *Journal of Agricultural Economics*, Vol. 49, pp. 294-305.

TOWARDS A SERVICE QUALITY MEASURE OF THE PORTUGUESE TRADITIONAL RETAIL INDUSTRY

Claudia Miranda Veloso
GOVCOPP, UNIAG, ESTGA, University of Aveiro, Institute Polytechnic of Bragança, Portugal
claudiamiranda@ipb.pt; cmv@ua.pt

Humberto Ribeiro
GOVCOPP, ESTGA, University of Aveiro, Portugal
humberto@alumni.dmu.ac.uk

Sandra Raquel Alves
CIC.DIGITAL, ESTG, Polytechnic Institute of Leiria
raquel.alves@ipleiria.pt

ABSTRACT
Several studies have been suggesting that service quality is one of the most important determinants of customer satisfaction and customer loyalty. In this sense, companies seek to continuously improve the quality of service in order to manage keeping their costumers not only satisfied, but loyal as well. However, there is a great confusion regarding how this service quality can be measured thus that it can be enhanced trying to assure customer satisfaction. The service quality and performance of any service are dependent on customer expectations and on the efficiency of the company to serve its customers. The crucial point of customer satisfaction is to identify the important attributes, considered by customers, as their needs and expectations. The purpose of this study is to validate the adaptation of the SERVQUAL model for evaluating the perceived quality of service offered by traditional trade, namely of the traditional retail stores in Portugal. The findings of this study suggest that the 22 items of the SERVQUAL model can be grouped in three principals' dimensions and can be applied with confidence to Portuguese traditional retail as well. In addition, the model can be regarded as a useful tool for traditional retail stores to help to become better acquainted with each other and move towards the path of quality service, in a continuous search of the customer satisfaction and loyalty, translated into excellent organizational performance and higher profitability.
Keywords: SERVQUAL, Retail Industry, Factor Analysis, Portugal

1. INTRODUCTION
Numerous changes in the organizational context are been required by the evolution on the provision of services, in an increasingly competitive environment and marked by the clients' requirements, particularly when considering the raising awareness of the act of to better serve customers, translated in the excellence of the service quality (Besharov, Barabashev, Baehler & Klerman, 2013). Gronroos (2009) argues that the term "service economy" emerges in this scenario and clarifies the structural change of the economy, praising the importance of services. Definitely, the term quality is very present in the business industry, where the organizations wish to provide quality to their customers, suppliers, partners and others. But it's not as simple as it sounds, because to benefit from quality, organizations must be ready to meet the expectations of their stakeholders, notably of their customers. With this, we can state that, in order to stay in progressively competitive markets, of goods or services, companies from all sectors have already adhered to service quality. The service industry is great competitive, mainly the retail industry, wherefore is crucial that organizations have a good knowledge of the business aspects that are important to their customers (Yuen and Chan, 2010).

Only with a deep understanding, is it possible to respond positively to the expectations of customers regarding the services offered. To this extent, the strategy for creating competitive advantage resides in providing a high quality of service which results in satisfied customers and customer retention, dimensions which are core for the survival of the retail industry. Traditional retail store must find a way to differentiate itself so it can stand apart from other retailers and drive more consumers to its store. Service quality is one way to accomplish this. Retailers need an efficient way to assess the service quality of their store (Simmers and Keith, 2015). However, the focus on customer retention in this area of business is one of the right strategies to generate profits (Sirohi, McLaughlin and Wittink, 1998). It is believed that satisfaction is a consequence of the quality of the service, and guaranteeing it, increases the likelihood of involving the customer and loyalty. Several studies have shown that there is a positive relationship between quality of service and consumer loyalty (Zaibaf, Taherikia and Fakharian, 2013; Al Khattab and Aldehayyat, 2012; Yuen and Chan, 2010; Mohsin and Lockyer, 2009; Ekinci, Dawes and Massey, 2008). Some authors have studied the relationship between perceived service quality and customer satisfaction in the services industry (Cronin and Taylor, 1992; Veloso, Ribeiro, Alves and Fernandes, 2017; Zaibaf, et al., 2013; Zhang and Prybutok, 2005), confirming that service quality is a significant antecedent of satisfaction. In this regard, Dabholkar, Shepherd and Thorpe (2000) argue that traditionally, most researchers conclude that customer satisfaction resulting from a particular experience of consumption, leads to an evaluation / attitude about the quality of service over a period of time. However, the reverse situation has stood out as the most relevant. Whereas the quality of service in the retail industry has been extensively researched internationally, there has been little research done in Portugal. In this sense, the aim of this study is to validate the SERVQUAL model as tool to measure the service quality in the Portuguese traditional retail industry. The choice of this topic is due to the need for traditional retailers to properly understand whether the quality service meets customer perceptions in the different dimensions of SERVQUAL, since the quality service contribute to customer satisfaction and loyalty, as they are determinant variables in maximizing profit, market share, and return on investment (Hackl and Westlund, 2000). This study has as central purpose building and validation of an instrument of evaluating of the perception of customer (SERVQUAL model) of the traditional retail stores in Portugal as to quality service provided by these traditional retail stores, allowing that in next researches be used of the new questionnaire, reduced and organized in the dimensions identified, with the aid of Factorial Analysis. In this paper, after this present introduction, a review of the main literature on service quality, then we presented the findings and discussion, ending with the presentation of the conclusion and the contributions of the research. This study is particularly important for retail managers (survival and growth of traditional retail stores), politicians (wealth creation, economic growth, etc.) and for the development of the literature in the Portuguese traditional retail industry.

2. THEORETICAL BACKGROUND

Gronroos (1995) refers that the definition of quality must consider the customer's perspective, given that it is their perception that matters. The quality orientation is based on the judgments about the aptitude of consumption, and the expectation of quality is one of the previous functions on which the services must supply (Gibson, 2003). From the perception of the clients, it is possible to make organizational decisions able to meet their demands and consequently enable the continuous improvement of products and services (Paladini, 2002). Téboul (1999) warns that, unlike the quality of a product, the quality of a service is judged by the service process and its results. According to several authors, in the marketing area, customer satisfaction is the best indicator of quality of service. After the purchase, customer satisfaction depends on the performance of the offer in relation to your expectations.

Kotler (2005) argues that the company provides quality whenever its service meets or exceeds the client's expectations. Thus, the quality service measurement is define by Kotler and Keller (2013) as the feeling of pleasure or disappointment resulting from the comparison of performance expected by the service (or result) in relation to the expectations of the person. Service quality has assumed a major role both in public and private institutions, as an indispensable requirement to the costumers' satisfaction. Firstly, it should be noted that the measurement of service quality is an important area of academic and scientific interest, which has assumed special prominence after the contribution of various authors (Parasuraman, Zeithaml and Berry, 1985). The way of measuring the quality of a service may occur through knowledge of the degree to which it meets or exceeds the expectations of the customer. In this sense, these definitions suggest that quality should in still the perspective of customer satisfaction from the perspective of service delivery. Parasuraman, Zeithaml and Berry (1988), who represent the American school, have designed an instrument for measuring quality of service, called SERVQUAL. These authors suggested the following definitions for the five dimensions: Tangibles: Physical facilities, equipment and appearance of personnel; Reliability: Ability to perform the promised service dependably and accurately; Responsiveness: Willingness to help customers and provide prompt service; Assurance: Knowledge and courtesy of employers and their ability to inspire trust and confidence; Empathy: Caring, individualized attention the firm provides its customers. SERVQUAL measures service quality from the customer's perspective of customer perceptions, through the amplitude of the discrepancy that exists between the expectations and perceptions of customers. Cronin and Taylor (1992) view that the validity of the use of expectations in the SERVQUAL model was called into question when consumers had no well- formed expectations and developed the SERVPERF scale which consists of the same 22 "items" of SERVQUAL, although centered only in measuring consumer perceptions regarding the quality of service. Despite the criticisms of SERVQUAL (Cronin and Taylor, 1992), it remains the most widely used theoretical framework for measuring the quality of services so that, in the literature there are numerous studies that apply the SERVQUAL scale to assess quality of services across physical and in digital environments. Despite the diversity of studies in many fields, in this study, SERVPERF model will be applied to the traditional trade of the Portugal in a similar manner as that of other studies realized at an international level, in the area of the retail industry (Abd-El-Salam, Shawky, and El-Nahas, 2013; Durvasula and Lysonski, 2010; Khare, Parveen, and Rai, 2010; Martinelli and Balboni, 2012; Tang, et al., 2015; Yu and Ramanathan, 2012; Yuen and Chan, 2010), in order to understand if this model can be validated for this area of activity in Portugal, as well as to understand if the 22 items of the scale have relevant significe in the perception of the quality of service of the customers of the Portuguese traditional retail. The measuring of the quality service is a challenge for any company, because it is directly linked to customer satisfaction and this is formed by several intangible factors. According to Nadiri and Hussain (2005) service quality increases customer satisfaction, stimulus intention to return, and inspires recommendations.

3. RESEARCH METHODOLOGY

The adaptation and application of the scale was based on a bibliographical review based on literature and research studies on the service quality (SERVQUAL and SERVPERF), as we have seen the model SERVPERF was developed and validated by Cronin and Taylor (1992), from of the same 22 "items" of SERVQUAL, although centred only in measuring consumer perceptions regarding the quality of service. The SERVPERF model is a tool that allows services companies to carry out measuring of the quality service provides to their customers, in a perspective of continuous improvement and promotion of better service quality customer, which in turn leads to greater customer satisfaction and loyalty and consequently a greater organizational performance and higher profitability.

It should be noted that SERVPERF model analyses the organization from different dimensions tangibles and intangibles regarding of the service quality, promoting a holistic analysis of its service quality provides to customers. The present study was based on the perspective of the customers of the traditional retail stores in Portugal. A questionnaire was designed as the survey instrument, which were included all the constructs of the proposed model. The questions in the questionnaire were based on a review of the literature in the area of the retail industry, described above in the theoretical background. This study was applied to customers from of traditional retail stores in Portugal during the first half of 2017. It was used a non-probabilistic sampling using convenience technique. The questionnaires were distributed online and the answers came from several cities and places of Portugal. In this study, respondents were required to fill out a three-page three sections. The first section consisted of a standard demographic profile of respondents. The second section contained the characterization of purchase process. The last section includes the statements of dimensions and their sub dimensions. The measurement items to measure primary and sub-dimensions of service quality were adapted from several researchers (Cronin and Taylor, 1992; Dabholkar, et al., 1996; Wu, Lin, and Hsu, 2011). Respondents were asked to use a five-point Likert-type scale (where 5–point scales anchored 1 = "strongly disagree" and 5 = "strongly agree") to record their perceptions. Construct reliability was assessed by using the Cronbach's alpha coefficient. Reliabilities ranged from 0.837 to 0.976, suggesting that the construct could be used with confidence.

4. DATA ANALYSIS AND FINDINGS

4.1. Instrument and Procedure for data collection

As a data collection instrument, a questionnaire was online sent to customers of the traditional retail in Portugal (n = 379). The data collection was carried out in the first half of 2017. After obtaining the questionnaires, statistical data were processed in the Statistical Package for the Social Sciences (SPSS) 20 program.

4.2. Data analysis procedure

Participants' responses were treated using SPSS software and subjected to descriptive statistical analysis, factorial analysis and Cronbach's alpha calculation. The data were examined for normality, collinearity and distribution of outliers. The factorial of the sample was tested by the Kaiser-Meyer-Olkin Coefficient and Bartlett's sphericity test, as recommended by Maroco (2010). After that, the data were submitted to analysis of the Principal components (PC) and the Factorization of the Principal Axes (PAF). The reliability of the factors was estimated by the calculation of Cronbach's alphas. In sum, for the validation of the scale, it was make the first extraction of its factors (dimensions and components) was performed by analysing its Principal Components (PC) in order to verify the initial number of factors in the matrix. We also analysed extreme cases, multicollinearity and matrix factorization through sample size, intercorrelations, as well as distribution of the eigenvalues and graphic analysis through the scree plot. Then, Principal Axis Factoring was carried out. Factor scores were also calculated.

4.3. Sample Profile

The sample of Portugal was composed of total 379 respondents which 54.4% (206) were females and 45.6% (173) were males. The maximum number of responses was obtained from 35 - 44 years old with 43% (163) and the second age group from 45 - 54 years, with 26.4% (100) responses. Most respondents 63.1% (239), were married or in an unmarried partner, 28% (106) were single. It is verified most of respondents had higher education qualifications, as 35.4% (134) were graduates; 10.8% (41) had postgraduate degrees; 12.4% (47) had a master's degree and 9% (34) were PhDs. As for the professional occupation mostly, 78.6% (298) were employed.

In the activity sector, banking stood out with 27.7% (105) of the respondents, followed by education sector with 14.2% (54) of the individuals. Regarding the average annual income, it is observed that 31.9% (121) of the respondents earned between 7001€ to 20000€; 30.9% (117) earned between 20001€ to 40000€ and 20.6% (78) received annually between 40001€ to 80000€.

4.4. Purchase Process

The obtained results show that all of the respondents purchases in traditional trade. It was verified that 79.7% (302) of the individuals had made purchases in traditional trade there is more than 12 months. The most popular frequency of purchases registered was weekly, 36.1% (137) of the respondents go to the traditional trade once a week and 32.2% (122) do it monthly. As for the average annual spending on purchases in the traditional trade, it was found that 29.3% (111) of the respondents spend under 100€ and that 39.6% spend more than 400€ annually.

4.5. Correlation Analyse

Analysing the 0 shows that the sub-dimensions that constitute Service Quality (SQ) present strong and direct correlations with the SQ, namely reliability, responsiveness and empathy sub-dimensions with very strong correlation coefficients.

Dimensions	Service Quality
Tangibles	0,850
Reliability	0,930
Assurance	0,910
Responsiveness	0,915
Empathy	0,922

Table 1: Spearman correlation between SQ and its constituent dimensions

4.6. Validity and Reliability

The legitimacy of the factorial analysis was assessed by the Kaiser-Meyer-Olkin of Adequacy (KMO) measure of adequacy. The value obtained was 0.954, which means a strong correlation between the variables and it is considered according to Maroco (2010) as very good recommendation in relation to the factorial analysis. The Bartlett test ($p < 0.001$) allows us to conclude that the variables are significantly correlated. In this way, it can be ensured that with the available sample, the scale is subject to factorial analysis. That is, both tests allow the continuation of the factorial analysis. Still in factorial analysis it is common to evaluate the reliability and validity of the measuring instruments. The reliability of the instrument refers to the consistency and reproducibility property of the measure (Maroco, 2010). An instrument is reliable if it measures consistently and reproducibly a certain characteristic or interesting factor. In this study the Cronbach's alpha coefficient is used as a measure of reliability and the values obtained vary between a good and very good consistency.

4.7. Factor analysis

Graph criterion Scree Plot is the graphical representation of eigenvalues in relation to the number of factors, for extraction purposes. Typically, the graph shows a sharp interruption between the steep slope of the values with large eigenvalues and a gradual reduction related to the remainder of the values. In Figure 1, the graphic approach relative to the present study is presented. From what can be noted, there is a marked slope in the first factor, which represents the choice of a factor with the use of this criterion. Exploratory factorial analysis was performed, and it were obtained three factors (components) with a value greater than 1 (Figure 1) explaining 75.48% of the total variance (Table 2). The obtained values demonstrated, according to Maroco (2010), to be acceptable for the pursuit of the study.
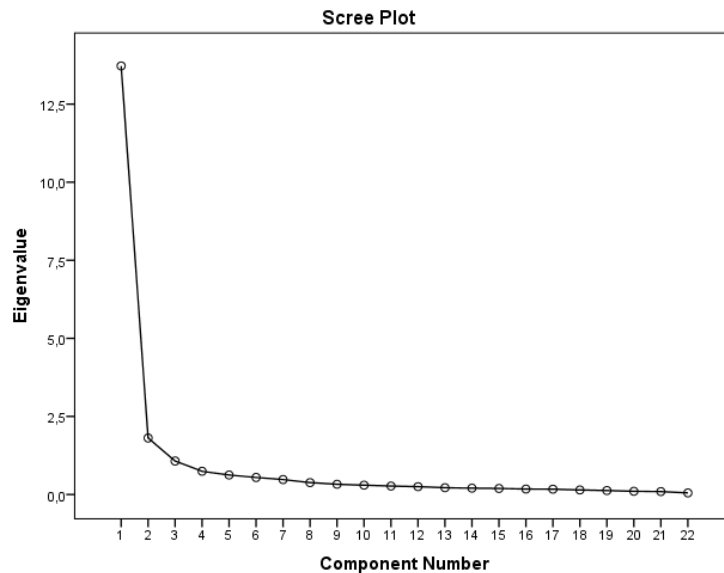
Figure 1: Scree Plot

Moreover, Table 2 shows that all variables have a strong or moderate relationship with the retained factors, because for the extracted factors, the percentage of the variance of each variable explained by the common factors extracted was higher than 49,8% for all variables.

Factors	Own Value	% de Variance	% Cumulative Variance
1	13,723	62,378	62,378
2	1,809	8,222	70,600
3	**1,073**	**4,876**	**75,476**

Table 2: Components Matrix

By analysis of Table 3 we group the 22 items by the 3 factors, taking into account the obtained score. The adjustment quality was carried by determining the Goodness of Fit Index (GFI), for which the value of 0.992 was obtained, however the GFI tends to overestimate the true value of the adjustment quality, reason why the degrees of freedom were calculated (AGFI), obtaining a value of 0.967 and the Root Mean Square Residual (RMRS) was calculated, obtaining: 0.037. By the analysis of the three indicators (GFI, AGFI and RMRS) we can say that a very good adjustment was achieved, according to Maroco (2010). In this Table shows the main factor matrix obtained by the Varimax rotation method. In the factorial analysis, no item of the 22 items SERVPERF model was excluded, all of which presented a correlation value higher than 0.50, in fact the minimum value obtained was 0.516. After the three factors were obtained, their designation was made, taking into account the theoretical reference. Thus, the dimensions that make up the SERVQUAL or SERVPERF Scale were denominated: Factor 1 - Dimension Assurance and Empathy with customers; Factor 2 - Dimension tangibles and Factor 3 - Dimension Reliability.

Table following on the next page

	Component		
	1	**2**	**3**
Q19	,907		
Q20	,889		
Q17	,871		
Q13	,840		
Q18	,830		
Q12	,823		
Q15	,814		
Q16	,800		
Q14	,741		
Q8	,734		
Q21	,733		
Q7	,716		
Q9	,712		
Q3		,741	
Q2		,701	
Q5		,683	
Q4		,668	
Q6		,571	
Q1		,516	
Q10			,873
Q11			,842
Q22			,621

Table 3: Rotated Component Matrix

By performing a cross-analysis of tables 2, 3 and 4 we can describe the three dimensions with respect to their composition of the items and the explanation of each dimension for the total variance. Service quality with Empathy and Assurance to customers was the first dimension obtained after the factorial analysis of the SERVQUAL model was carried out. The name assigned is related to the nature of the items most relevant to this dimension, which refer to aspects related to empathy and assurance. It is constituted by 13 items that refer to providing individualized care and attention to clients and having the ability to convey trust and security with courtesy and knowledge of what they do. This first factor explains 62.378% of the total variance. The second dimension, Tangibles is composed of six items, five of which relate totally to the physical aspects, namely: facilities, equipment, personnel involved and communication material that explains 8.2% of the variance. The third and last dimension obtained after conducting a factorial analysis was called Reliability. The name assigned is related to the nature of the items, which refers to aspects related to capacity to perform a promised service reliably and accurately. This dimension consists of 3 items that 4,876 of the variance explains. The internal consistency study was performed using Cronbach's alpha coefficient (Table 4). All dimensions have obtained values for the Cronbach Alpha ranging from 0.837 to 0.976, which means that the dimensions have a good or very good internal consistency. We highlight the first dimension of service quality scale with value above 0.90, which means according to Hill and Hill (2009) that this dimension present an excellence internal consistency. In the second and third dimensions Cronbach's alpha values are good, according to Maroco (2010). Thus, taking into account the previously mentioned, it can be said that the values demonstrate an internal consistency appropriate to the achievement of the study (Table 4). Regarding the dispersion of responses it can be stated that this is moderate, although in the dimension 3 coefficient of variation is close to 30% which results in a high dispersion.

Factors	Items	Cronbach's Alpha	Minimum-Maximum	Average	Standard Deviation	Coefficient of Variation	Medium
F1	7; 8; 9; 12; 13; 14; 15; 16; 17; 18; 19; 20; 21	0,976	2,00-5,00	4,216	0,652	15,46%	4,077
F2	1;2;3;4;5;6	0,884	2,17-5,00	3,956	0,659	14,66%	4,000
F3	10; 11; 22	0,837	1,00-5,00	3,621	0,946	26,13%	3,667

Table 4: Statistic Summary of Factors extracted by Factorial Analysis

4.8. Correlation between Factors

Concerning the correlations between factors, all there are at least correlations of moderate intensity, although they are all statistically significant and positive. In short, the correlations between the factors are positive and statistically significant, being an indicator of consistency between the dimensions of the construct and also the validity or fidelity argument of the measure (Table 5).

	F1	F2	F3
F1	1		
F2	,668**	1	
F3	,608**	,727**	1

Table 5: Correlation between Factors
Note: **Correlation is significant at the 0,01 level (2-tailed).

5. DISCUSSION AND CONCLUSIONS

In this study, the application of the SERVPERF scale was validated for a population of customers from traditional retail of Portugal. It was verified that the minimum, maximum, average and median values are distributed over the intervals of the response scale, revealing some sensitivity in the evaluation of the construct. The value obtained from KMO was 0.954, being the same, according to Maroco (2010) considered excellent. Concerning the values of the Cronbach alpha, the scale dimensions presented values varying between 0.837 and 0.976, values that mean a very good internal consistency (Hill and Hill, 2009; Maroco, 2010), which shows a good reliability of the instrument of the service quality scale. By means of the above, it can be affirmed that the results obtained have proved satisfactory in all dimensions to the pursuit of the study. An exploratory factorial analysis with varimax rotation was performed. After the same, the 22 items under evaluation were grouped into three dimensions renamed, according to the bibliographic research, in mainly from definition built by authors of SERVQUAL scale (Parasuraman et al, 1988) by: 1) Empathy and Assurance to customers; 2) Tangibles and 3) Reliability. The dimensions that constituted the final version of the quality service from traditional retail assessment instrument explain 75,476% of the total variance. The results found by the factorial analysis show that traditional retail store customers are concerned about the appearance of the store, as well as worrying about the level of confidence, tangible aspects and empathy that the Portuguese traditional retail conveys at the time of making a purchase, negotiation, or acquisition of products or services. In the present study, the fact that the sample was convenience could be considered as a limitation, since the results should not be generalized. The translation of the SERVPERF scale into Portuguese is another limitation. Future research is therefore necessary to test the existence of the five dimensions of service quality in the traditional retail industry, as well as to compare these new results with those of this research. This research aimed to validate the service quality scale - SERVPERF model.

It was intended to verify the factorial structure of this scale obtained in a convenience sample of the customers of traditional retail in Portugal, and thus verify the validity of the application of the SERVPERF model, developed in an American context, to measure the service quality perception of customers in services industry. The results pointed to an empirical structure similar to the SERVPERF model, made up of 22 items but grouped just in to three factors. The three dimensions identified allow the evaluation of the customers' service quality perception in relation to traditional retail, such as their perception of service quality with the empathy, assurance, tangibles and reliability to the traditional retail stores. Some dimensions can be evaluated separately, in the case of replication of this scale in traditional retail stores. If there is, for example, an interest in investigating the greater or lesser service quality perception of the customers with the tangibles, it is recommended to analyse the items belonging to this factor. The same can be observed in relation to other dimensions identified, such as the perception of service quality with the empathy and the assurance, among others. In summary, the SERVPERF scale was reliable for what it aims to evaluate, and it is an important tool in the strategic of management and marketing within retail industry, especially in the specific case of traditional retail stores. It is recommended that there be replication in other retail stores, with distinct cultural characteristics and a diversified organizational structure compared to those used both in their original design of the SERVPERF model and in this study. Furthermore, according to several studies in services industry the service quality correlates positively and significantly with customer satisfaction and loyalty, and these contribute to the enhance profitability and to the sustainable competitiveness of organizations. It is therefore important to assess the perceived service quality and the satisfaction of customers and to provide a service quality in according to expectations, desires and needs of customers of the traditional retail. The purpose of this study was to present the construction and validation of the SERVPERF Scale for the context of Traditional retail industry in Portugal. The scale consisting of 22 items that was grouped in three factors, allows evaluating the service quality of the customers that buy in Portuguese traditional trade. This model proved to be easy to apply and presented a good index of reliability and validity, so it is a valuable tool for studies that intends to evaluate the perception of service quality of retail industry. Finally, this study shed light on the aspects that customers observe and appreciate whenever making a purchase, as well as allowed to observe more closely the way in which the customer would like to be attended by the employees of the retail industry. Therefore, the results of this study do make a contribution for a better understanding of the new dynamics and changes that will most likely assertively impact the traditional retail industry.

Projeto POCI-01-0145-FEDER-008540

LITERATURE:

1. Abd-El-Salam, E. M., Shawky, A. Y., & El-Nahas, T. (2013). The impact of corporate image and reputation on service quality, customer satisfaction and customer loyalty: testing the mediating role. Case analysis in an international service company. Journal of Business and Retail Management Research, 8(1), 130-153.
2. Al Khattab, S. A. & Aldehayyat, J. S. (2012). Perceptions of Service Quality in Jordanian Hotels. International Journal of Business and Management, Volume 6(7), pp. 226-233.
3. Besharov, D. J., Barabashev, A., Baehler, K., & Klerman, J. A. (2013). Improving the quality of public services: A multinational conferen¬ce on public management. Journal of Policy Analysis and Management, 32(1), 204-210.
4. Cronin, J., & Taylor, S. (1992). Measuring service quality: a reexamination and extension. Journal of Marketing, 56 (3), 55-68.
5. Cronin, J. & Taylor, S. (1994). SERVPERF versus SERVQUAL: Reconciling performance-based and perceptions-minus-expectations measurement of service quality. Journal of Marketing, Volume 58, pp. 125-131.
6. Dabholkar, P., Shepherd, C. & Thorpe, D. (2000). A comprehensive framework for service quality: An investigation of critical conceptual and measurement issues through a longitudinal study. Journal of Retailing, Volume 76(2), pp. 139-173.
7. Dabholkar, P., Thorpe, D. I. & Rentz, J. O. (1996.) A measure of service quality for retail stores: Scale development and validation. Journal of the Academy of Marketing Science, Volume 24(1), pp. 3-16.
8. Durvasula, S., & Lysonski, S. (2010). Diagnosing service quality in retailing: the case of Singapore. Journal International Business and Entreprenurship Development, 5 (1), 2-17.
9. Ekinci, Y., Dawes, P. & Massey, G. (2008). An extended model of the antecedents and consequences of consumer satisfaction for hospitality service. European Journal of Marketing, Volume 42(1/2), pp. 33-68.
10. Gibson, C. B. (2003). Quality of team servi¬ce: the of field independent culture, quality orientation and quality improvement focus. Small Group Research, 34(5), 619-646.
11. Gronroos, C. (1995). Relationship marketing: the strategy continuum. Journal of the Aca-demy of Marketing Science, 23(4), 252-254.
12. Gronroos, C. (2009). Marketing: gerencia¬mento e serviços. 3.ª Ed. Rio de Janeiro: Editora Campus.
13. Hackl, P., & Westlund, A. (2000). On structural equation modeling for customer satisfaction measurement. Total Quality Management, 11 (4/5/6), S820–S825.
14. Hill, M.. & Hill, A. (2009). Investigação por questionário. Lisboa: Edições Sílabo.
15. Khare, A., Parveen, C., & Rai, R. (2010). Retailer behavior as determinant of service quality in Indian retailing. Journal of Retail & Leisure Property, 9 (4), 303-317.
16. Kotler, P., & Keller, K. L. (2013). Administra¬ção de marketing. 14.ª ed. São Paulo: Pear¬son.
17. Kotker, P. (2005). Principles of Marketing. Edition illustrated. Financial Times Prentice Hall.
18. Maroco, J. (2010). Análise estatística com utilização do SPSS (3ª ed.). Lisboa, Portugal: Edições Sílabo
19. Martinelli, E., & Balboni, B. (2012). Retail service quality as a key activator of grocery store loyalty. The Service Industries Journal, 32(14), 2233-2247.
20. Mohsin, A. & Lockyer, T. (2009). Consumer perceptions of service quality in luxury hotels in New Delhi, India: a exploratory study. International Journa of Contemporary Hospitality Management, Volume 22(2), pp. 160-173.
21. Nadiri, H., & Hussain, K. (2005). Perceptions of service quality in North Cyprus hotels. International Journal of Contemporary Hospitality Management, 17 (6/7), 469-480.

22. Paladini, E. P. (2002). Avaliação estratégica da qualidade. São Paulo: Atlas.
23. Parasuraman, A., Zeithaml, V. & Berry, L. (1985). A conceptual model of service quality and its implications for future research. Journal of Marketing, Volume 49(1), pp. 41-50.
24. Parasuraman, A., Zeithaml, V. & Berry, L. (1988). SERVQUAL: A multiple-item scale for measuring consumer perceptions of service quality. Journal of Retailing, Volume 64(1), pp. 12-40.
25. Simmers, C. & Keith, N. (2015). Measuring retail store service quality: the disparity between the retail service quality Scale (RSQS) and Comment Cards. International Academy of Marketing Studies Journal, Volume 19(2), pp. 117-126.
26. Sirohi, N., McLaughlin, E. W. & Wittink, D. R. (1998). A model of consumer perceptions and store loyalty intentions for a supermarket retailer. Journal of Retailing, Volume 74(2), pp. 223-245.
27. Tang, Y., Stanworth, J., Chen, W., Huang, S., & Wu, H. (2015). Toward a measure of Chinese hypermarkt retail service quality. Total Quality Management, 26 (3), 327-338.
28. Téboul, J. (1999). A era dos serviços: uma nova abordagem ao gerenciamento. Rio de Janeiro: Qualitymark.
29. Veloso, C.; Ribeiro, H.; Alves, S.; Fernandes, P. (2017). "Determinants of Customer Satisfaction and Loyalty in the Traditional Retail Service", Economic and Social Development Book of Proceedings, pp. 470-485.
30. Wu, J., Lin, Y. & Hsu, F. (2011). An empirical analysis of synthesizing the effects of service quality, perceived value, corporate image and customer satisfaction on behavioral intentions in the transport industry: a case of Taiwan high-speed rail. Innovative Marketing, Volume 7(3), pp. 80-100.
31. Yuen, E. F. & Chan, S. S. (2010). The Effect of Retail Service Quality and Product Quality on Customer. Journal of Database Marketing & Customer Strategy Management, Volume 17(3), 222-240.
32. Zaibaf, M., Taherikia, F. & Fakharian, M. (2013). Effect of perceived service quality on costumer satisfaction in hospitality industry: Gronroos' service quality model development. Journal of Hospitality Marketing & Management, Volume 22(5), pp. 409-504.
33. Zhang, X., & Prybutok, V. (2005). A Consumer Perspective of E-Service Quality. IEEE Transactions on Engineering Management, 52 (4), 461-477.

CUSTOMER SATISFACTION, PRODUCT AND SERVICE QUALITY IN RETAIL MANAGEMENT: THE CASE OF A FAST FOOD CHAIN

Gabriela Pinto
JCS Group, Lisbon, Portugal
gabrielasnpintos@gmail.com

Humberto Ribeiro
GOVCOPP, ESTGA, University of Aveiro, Portugal
humberto@alumni.dmu.ac.uk

Sandra Raquel Alves
CIC.DIGITAL, Polytechnic Institute of Leiria
raquel.alves.pt@gmail.com

Claudia Miranda Veloso
UNIAG, Institute Polytechnic of Bragança, University of Aveiro, Portugal
cmv@ua.pt

ABSTRACT

The objective of this paper is to examine customer satisfaction, products used in services, and the importance of service quality in the particular context of a fast food chain environment. In order to understand the interactions of such dimensions in retail management, this paper starts by offering a characterization of the company, presenting the services provided and the type of meals served, referring also additional chains of diverse restaurants belonging to the parent holding company, allowing to have a more comprehensive view and to explore other different strands of food service. Besides the product quality issues, this research focus also on rules and standards that are imposed by safety and hygiene requirements, highlighting the importance given to these particular topics, which are rich in specifications. Finally, the views of customers regarding the restaurant and food service are examined. In order to achieve this purpose, several research hypotheses were designed, focused on accessing several aspects of consumer satisfaction on a fast food chain. An inquiry was carried in order to examine such views, using the questionnaire technique, from which results has been found that the majority of customers are regular ones, and such loyalty can be measured by the intention to return, which was recorded as high, and occurs regardless of gender, or age group. Overall, it is also suggested that there is satisfaction with the promotions made, together with the services that the restaurant provides, although not necessarily true when such services are not on promotion – in this case, prices are higher and the relation quality-price diminishes, hurting customers' perceived satisfaction.
Keywords: Service Quality, Product Quality, Retail Management, Fast Food, Customer Satisfaction

1. INTRODUCTION

The subject of consumer satisfaction may be regarded nowadays as too much commonplace, but the fact is that customer opinion continues to be more and more important for businesses and corporate success, being often critical to ensure keeping the values and the goals of organisations, for that case, the event can continue with smooth operation and service which they are accustomed to provide. Indeed, for many businesses, customer opinion is key for reaching targeted figures and other objectives, ensuring also that diverse operations may continue to function properly and smoothly.

The objective of this paper is to examine customer satisfaction, products used in services, and the importance of service quality in the particular context of a fast food chain environment. In order to understand the interactions of such dimensions, this paper starts by offering a characterization of the company, presenting the services provided and the type of meals served, referring also additional chains of diverse restaurants belonging to the parent holding company, allowing to have a more comprehensive view and to explore other different strands of food service. Besides the product quality issues, this research focus also on rules and standards that are imposed by safety and hygiene requirements, highlighting the importance given to these particular topics, which are rich in specifications. Finally, the views of customers regarding the restaurant and food service are examined. In order to achieve so, several research hypotheses were designed, focused on accessing several aspects of consumer satisfaction on a fast food chain. An inquiry was carried in order to examine such views, using the questionnaire technique, targeting randomly selected fast food chain customers. It is intended that an assessment can be made related to customer satisfaction in relation to the services provided at the restaurant. It is also intended that the company may effectively show what it can offer to the client, and, on the other hand, that the customer may know how to take advantage of the services that are provided to him. Thus, the idea is to be able to help customers who use this type of services, trying to ensure experience satisfaction, and willingness to return.

2. THEORETICAL FRAMEWORK
2.1. Consumer behaviour
The organisation examined in this research is not clearly and fully identified due to a confidentiality agreement. Nevertheless, the authors are authorized to disclose that the company subject to our research is composed by a large chain of restaurants crossing all over the Iberian Peninsula territory. The corporation has been created in the early 1990s in Spain and has begun its activity in Portugal in the middle of the same decade. It has currently about 40 restaurants in Portugal, which can be found in different markets from malls to service areas, among other spaces. Similarly in Spain, where the number of restaurants is substantially higher; and in Italy, where the number is, however, substantially inferior. In relation to their recipes, these are regarded as being creative, innovative and exclusive, having to ensure that the products are always fresh and made with garden-fresh and natural ingredients at the moment of serving. In 2010, despite the environment of great economic and social turbulence, a classic situation as described seminally by authors such as Drucker (1993), the company achieved a strong momentum by launching new receipts that reinforced the brand positioning as sandwich specialists. Its range of products offers cold, hot and light sandwiches, being prepared according to original and innovative recipes that allow the client to savour delicious and freshly prepared meals with the certified ingredients. It is also noteworthy to mention that the company is integrated in a group which has also other types of restaurants and food businesses, with different types of products and services. The parent holding company holds several food services brands and has several hundreds of restaurants, being the leading company in the fast food industry in the Iberian Peninsula. One can also make a mention to the mission, vision and values of the company. In terms of the mission, which can be regarded as the "raison d'être" of the company, reflecting the basic purpose of its existence, it is, on this case, to be a restaurant of reference in in the sandwiches market. As Kotler, Jaya, & Setiwan (2013) refer, and outlined in their Values-based matrix model, the mission should not be changed, being the flexibility in the operations and in the scope of business, something which is followed by the company. About the vision, contrary to the mission, has to look to the future and can be defined as an image of a future desirable situation of the company. It is what the company intends and wants to achieve (Kotler, Jaya, & Setiwan, 2013).

For the examined company, its objective is to capture the attention of the customer through its quality and speed of service, avoiding that the client may remain a long time waiting to have the request fulfilled. As for the values, and according to the same authors, they can be considered the institutional behaviour patterns of a large company. For the company, values communicate a set of corporate and management priorities to include in their practices, which are expected to reinforce behaviours that benefit the company and communities inside and outside the organization, which helps strengthen the organization's values. Regarding the marketing concept, it is regarded here as the relationship that any organization has with the market where it operates, in order to reach the objectives and satisfy the needs of the market. Marketing becomes an important tool for management, because it conceives strategies and action programs so that the company responds to the pressures of the markets and the industry where it acts. It needs to cover different dimensions of analysis, such as demographics, politics, technologies, economics, social and cultural concepts.

2.2. Consumer behaviour

As Solomon (2002) notes: "Consumer behaviour is the study of processes involved when individuals or groups select, buy, use or discard products, services, ideas or experiences to satisfy their needs and desires". According to Santos (2011), the modern consumer is constantly looking for new products and services, and organizations need to follow these changes in the new market. But for these standards to be maintained, the quality of services and care must be continuously in focus. Not every consumer act similarly towards a new product. There are different attitudes and behaviours because not everyone satisfies their needs or desires, what they really look for in a particular product. It is necessary to understand the consumer, to know what he wants and to understand his behaviour. If they are aware of change and consumer behaviour it is easier for them to stay in tune with them and to better understand their needs and offer what they seek. According to Sousa (2010), developing a marketing philosophy implies placing the client as the main element of the company's entire activity. In this sense, a company does not need to be too large or too small to adopt customer orientation. A customer-centric organization is one that strives to perceive, serve, and meet the needs and needs of its customers (Oliveira, Pelissari, Gonzales, Fabrini, & Silveira, 1998). These authors also affirm that at the moment the customer's expectations are met, they can be said to be satisfied. The following Figure 1, shown below, presents a scheme of the concept of satisfaction in a linear way.
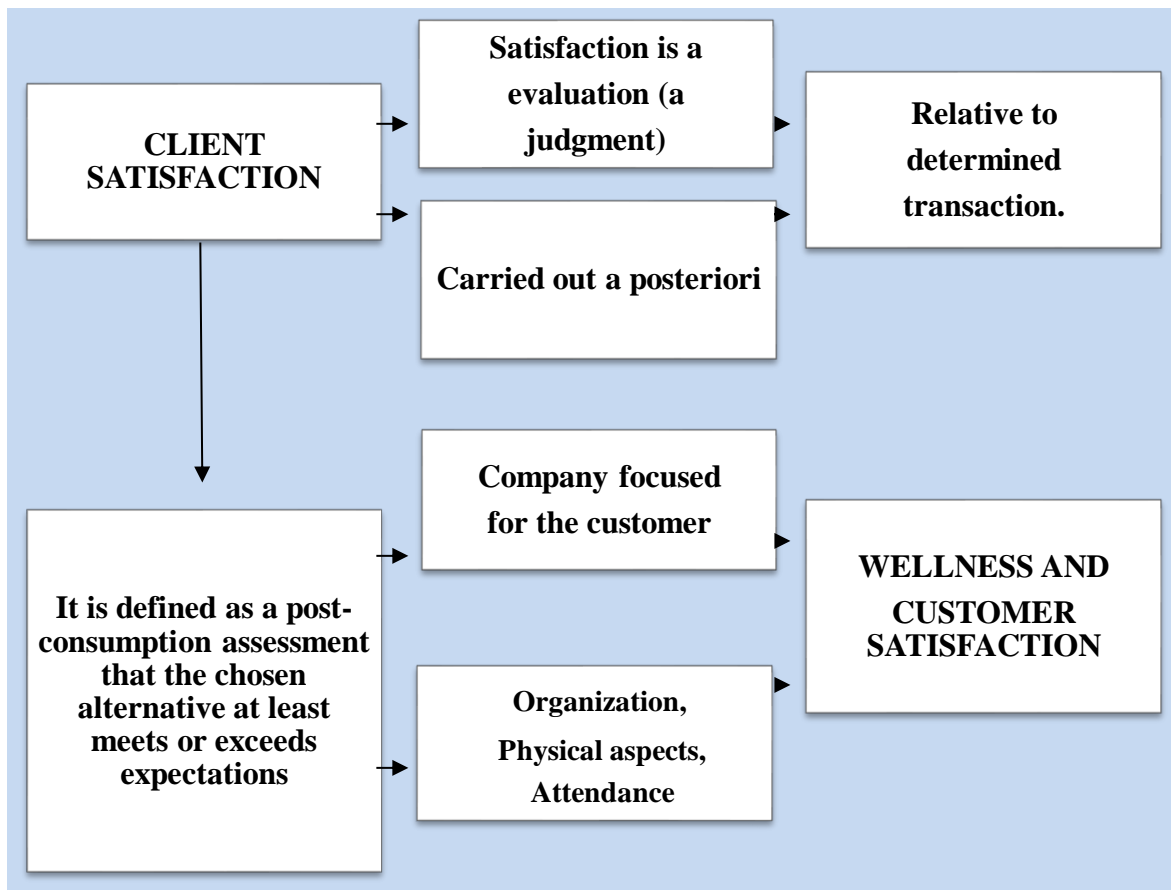
Figure following on the next page

Figure 1: Concept of customer satisfaction (Source: Adapted from Oliveira et al., 1998)

2.3. The Costumer

It is known that the customer is looking for more and better, so it is necessary to know the market and the needs of the consumer. The client is seen as the target of study in the launch of any type of product or service and it is through him that he will study his behaviour in the reception of the same. Therefore, companies find out if they have made the right choices when trying this type of product/service and satisfy the customer's needs. For the restaurant examined in this paper, one of the most important factors is the customer and it is for them that it is focused, considering then it is important the existence of a mystery client so that it can evaluate the type of service rendered, making a report of what happened and showing if the same is satisfied.

2.4. Satisfaction

There are several factors that interfere with purchasing behaviour and affect consumer choice for a particular product or brand. These are the cultural, social, family, economic and psychological factors. The concept of satisfaction can be considered the most important factor for the consumer's decision. This market seeks the good or service that best suits your need and so find yourself satisfied. Maslow (1954) sought to understand the behaviour of the individual and hierarchize their needs in order to know which ones would be the most important for the human being. He understood that behaviour is motivated by needs, calling them fundamental. These needs are based on two groups: disability and growth. The needs of disability are physiological, safety, affection and esteem, while those of growth are those related to self-development and self-realization of man (Guimarães, 2011). The buying process can be explained as follows in Figure 2.
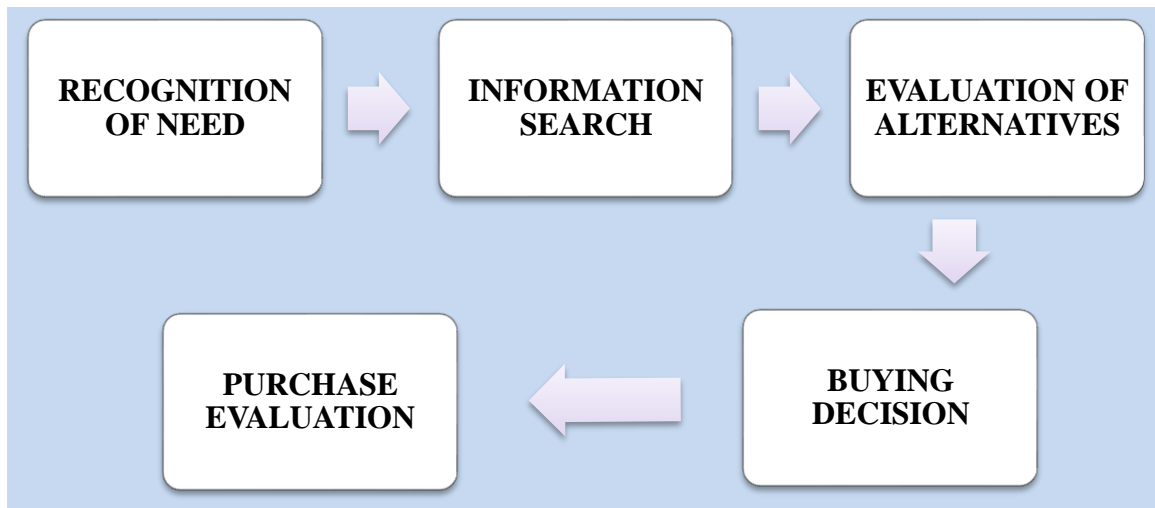
Figure 2: Consumer buying process (Source: Adapted from Guimarães, 2011)

Guimarães (2011) argues that this theory is seen as fundamental for understanding the factors that justify behaviour, stimulating the individual to act. The customer does not simply seek to buy by purchase. It has a certain behaviour in which it studies the reason for obtaining such good or service. Maslow's hierarchy of needs, also known as Maslow's pyramid, is a hierarchical division proposed by Abraham Maslow, where lower-level needs must be met before the higher-level needs, as he considers the first needs the most to be met (1954). Maslow defines a set of five needs described in the pyramid. Very briefly, the primary or physiological needs are those basic needs of the human being; the security needs are of stability and security; the need for affection and belonging are related to personal feelings, acceptance, affection seeking, among others; those of esteem are of self-realization, prestige, recognition, social status; the self-realization has that the cultural context exerts a great influence both in the way each individual satisfies the primary needs and in the nature of the secondary needs (Gonçalves, 2008). There are several definitions for customer satisfaction and all are different, but similar because they all speak to the customer, service or offer. According to Beber (1999), another way of conceptualizing satisfaction is to consider it in two essential dimensions: satisfaction with a specific transaction and accumulated satisfaction. The unique experience with a product is different from that accumulated because it is influenced by past consumer experiences. The consumer learns from past consumer experiences, modifying their expectations regarding future consumption. Finally, as Dantas (2001) notes: "Satisfaction is something that is linked to the quality of the product that is offered and / or the service that is provided. And it is only those who perceive quality who consume the product or service. In other words, it is no use for a company to have products or services with excellent quality from a technical point of view if, when offered to the market, the target audience does not perceive this quality".

2.5. Quality
Toledo (1994) pointed out that the launch of new products and the improvement of the quality of existing products are two issues of great relevance to the competitive capacity of companies. Both make up what is commonly called Product Development. In relation to this type of service (restoration), the technical quality must take into account the internal rules imposed by the company (composition of products, condition of sale) and also the standards established externally by the authorities (safety, hygiene, etc). It is necessary to follow the rules imposed so that the products sold are of better quality and that the customer feels safe when consuming them. "Quality is a difficult word to define because of the subjectivism and the general use it is made of.

In its generic sense, it is defined as the property, attribute or condition of things or people capable of distinguishing them from others and determining their nature "(Ribeiro, Schramm, & Barbosa, 2010). In relation to this type of service (restoration) the technical quality that takes into account the rules imposed internally in the company (composition of products, condition of sale) and also the standards established externally by the competent authorities must be taken into account.

2.5.1. The product

According to Pires (1991), "a product is the set of tangible and intangible attributes presented by something that satisfies the need of customers who acquire or use it". A customer does not purchase a product or service for no reason, as clients do usually have in mind questions such as the brand, quality, fashion, need. Not everyone acts the same way nor do they seek the same. So there are different markets and different products. In this case, it is necessary to take into consideration the quality of the product, its handling, the exposure validity, the quality of the frying, among others. Whatever the product chosen by the customer, you can rely on its quality through the ISO 22000 certified process. It is also known that the products when they arrive at the restaurant have two types of validity, the primary (validity that comes in the packaging of the product), and the secondary (the validity that is given after opening the product).

2.5.2. Audits and Hygiene Control

In this type of service, we seek to take into account good management, either of products or employees. For this, it is necessary that there are internal audits to know if the restaurant is in good functioning, taking into account the products, cleanings, security and the values of the company previously mentioned. These audits are complemented with the control, hygiene and safety in the work performed by external companies that also make their evaluation, confirming that everything is within the norms imposed by ISO 2000 and HACCP.

3. RESEARCH METHODOLOGY

3.1. Purpose of the research

The central objective of this paper is based on the study of the customer satisfaction at a fast food restaurant. There are several studies on customer satisfaction, more specifically on their consumption. In this case, a study is presented that measures customer satisfaction, taking into account several variables such as the opinion about the service, and its possible relation with gender; the opinion about the service and the age group; the intention to return and gender; whether the opinion on the service is independent of the intention to return; and also whether the opinions on the existing promotions are correlated with the classification made to the different aspects of the restaurant.

3.2. Research hypotheses

Following the presentation of the theoretical framework, made in the previous section of this paper, and being aware of the purpose of the study, the research hypotheses can be outlined as shown below:

- H1: The opinion on service care is independent of gender.
- H2: The opinion about the service is independent of the age group.
- H3: The intention to return to visit is independent of gender.
- H4: The intention to return to visit is independent of the age group.
- H5: The opinion on the service is independent of the intention to return to visit.
- H6: Opinions on the existing promotions are correlated with the classification made to the different aspects of the restaurant.

3.3. Nature of the study and questionnaire preparation

The research conducted followed a quantitative approach because what is intended is to obtain conclusive results and, therefore, the tool chosen to be used was the questionnaire, being this one of the tools most used in management practices and studies. The questionnaire was addressed to customers of the restaurant, chosen randomly, and taking into account the various hypotheses formulated. The general structure of the document and the intention of the study to be applied was presented to the respondents. They were also been told to considering it to be a strictly academic work, being strictly confidential, the answers being anonymous, and being subsequently subject to some aggregate statistical analysis. We then determined the parts that should be included in the questionnaire, among other items, such as the selection of the scales of measurement of the variables. This questionnaire aims not only to know whether customers are satisfied with the service provided, but also to examine their intention to return likelihood.

3.4. Metrics

Statistical analysis of the data concerning the study was carried out using the software Statistical Package for the Social Sciences - SPSS for Windows, version 20.0. In the first phase, in order to describe and characterize the study sample, a descriptive analysis of the data was performed according to the nature of the variables under study. Statistical measures were used: absolute frequencies, relative frequencies, pie charts and bar graphs to describe some characteristics of the sample. We also used statistical measures such as: minimum, maximum, median, average and standard deviation to describe the opinion about the promotion of the classification of various aspects of the restaurant. Finally, statistical analysis of the results was performed using variable crossing tables with the application of the Fisher exact test to evaluate the independence of the variables. The Fisher test was used because the conditions of applicability of the Chi-square independence test (sample greater than 20 elements, expected frequency greater than 1 and 80% of expected frequency greater than 5) were not verified. Spearman's correlation coefficients were used to study one of the hypotheses, since the variables involved are of the ordinal type. This coefficient allows to measure the intensity of the association between the variables (as a rule of thumb, up to 0.39 weak correlation, from 0.40 to 0.69 moderate correlation, from 0.70 to 0.89 strong correlation, higher than 0.90 very strong correlation). The reference value of 5% was used as a level of significance, although in some situations 1% was used, so always the significance values obtained by the tests used were higher than 5%. In some cases the statistical significance of the observed relationships was not obtained.

4. SAMPLE CHARACTERIZATION AND RESEARCH RESULTS

The sample collected for the study is composed of 92 individuals, of which 51.1% (47) are male and 48.9% (45) female. Regarding the age of the sample under study, 53.26% (49) of respondents are aged between 26 and 45 years, 43.48% (40) of the respondents are aged up to 25 years and only 3.26% (3) of the respondents are over 45 years old. For the development of the study, the age variable was analysed considering only two classes: age up to 25 years, 43.5% (40) of the respondents and age over 25 years, with 56.5% (52) of respondent. Table 1 shows the characterization of the sample elements.

Table following on the next page

Table 1: Characterization of the relation with the restaurant

Variable	Absolute frequency	Relative frequency
Typical client (n = 92)		
Yes	63	68,5
No	29	31,5
Frequency (n=92)		
Two or more times a week	17	18,5
Once a week	16	17,4
Two to three times a month	24	26,1
Once a month	12	13,0
Less than once a month	23	25,0
Habitual moment (n=92)		
Lunch	31	33,7
Afternoon	21	22,8
Dinner	40	43,5
Customer Service (n=92)		
Reasonable	3	3,3
Good	55	59,8
Excellent	34	37,0

Table 1 shows that the majority of the sample (68.5%, 63) are habitual clients, the remaining 31.5% (29) of the individuals are not regular clients. As to the frequency with which they are clients, it is verified that 18.5% (17) attend the restaurant two or more times a week, 17.4% (16) of the respondents attends once a week, 26.1% (24) of the respondents attend two to three times a month, 13% (12) of the respondents attend once a month and 25% (23) attend less than once a month. It is also verified that 33.7% (31) of the respondents usually attend the restaurant at lunch time, 22.8% (21) of the respondents said that they attended in the afternoon and the majority 43.5% (40) attend on the hour for dinner. Regarding the opinion about the service, 59.8% (55) of the respondents rated it as good, 37% (34) of the respondents considered it excellent and only 3.3% (3) considered the service reasonable. To characterize the opinion of the respondents regarding the existing promotions was used a Likert scale scored from one to five being that the one corresponds to nothing satisfactory and five the excellent. Table 2 shows the results obtained.

Table 2: Distribution of responses obtained in relation to existing promotions

Items	N	Minimum	Maximum	Median	Average $\overline{X}$	Standard deviations
Promotions of the passbook	92	2	5	3	3,01	0,92
Promotions *price point*	92	2	5	3	3,05	0,87
Flyer promotions	92	2	5	3	3,04	0,91
Promotions 1€	92	1	5	3	3,48	1,01
Shopkeeper menu	86	1	5	3	3,26	0,95

Table 2 shows that in all the items a maximum of five points was observed, that is, the classification was excellent and that the items "Promotions € 1" and "Menu logista" the minimum was one point (nothing satisfactory) in the remaining items the observed minimum value was two points (satisfactory). It is observed that the values of median are also equal in all items, that is, in terms of median the opinion of the respondents corresponds to three points (Good). In average terms, the items "Promotions € 1" and "Menu logista" obtained the highest values and in the remaining items the average value was lower and very close to three points. Regarding the standard deviation, this is higher in the items with higher average value, which indicates greater disagreement among respondents, and registers lower value in the item "Promotions price point" which indicates a greater agreement of opinion among the respondents. In order to characterize the classification of the respondents in relation to several aspects of the restaurant, a Likert scale was scored from one to five, with one corresponding to the bad and five being excellent. Table 3 shows the results obtained.

Table 3: Distribution of the responses obtained in relation to the classification of services

Items	N	Minimum	Maximum	Median	Average $\overline{X}$	Standard deviations s
Quality of food	92	3	5	4	4,21	0,55
Variety of products	92	2	5	4	4,13	0,56
Sympathy of care	92	3	5	4	4,36	0,57
Speed of service	90	3	5	4	4,29	0,60
Price	92	2	5	4	3,70	0,84
Price-quality ratio	90	2	5	4	3,87	0,78

Table 3 shows that, for all items, a maximum of five points was observed, that is, the classification was excellent and that the items "Variety of products", "Prices" and "Value for money" were the minimum of two points (weak) in the remaining items, the minimum value observed was three points (reasonable). It is observed that the values of median and fashion are equal to each other. In average terms, the items "Service friendliness" and "Service speed" obtained the highest values (4.36 and 4.29 points, respectively) and in the items "Price quality ratio" and "Prices "The average value was lower, 3.87 and 3.70 points, respectively. Regarding the standard deviation, this is higher in the items with a lower average value, which indicates greater disagreement among respondents, and shows lower values in the remaining items, which indicates a greater agreement of opinion among the respondents.

In the bar graph of Figure 3, are shown the results, absolute and relative frequencies, of the intention to revisit the restaurant.
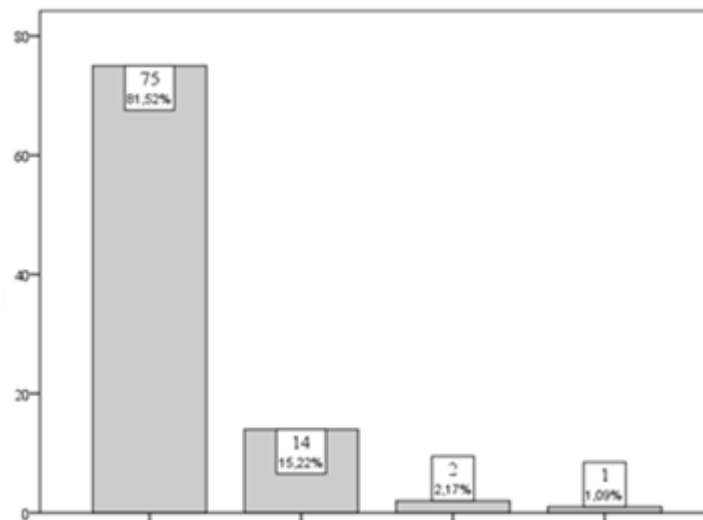
Figure following on the next page

Figure 3: Characterization of the intention to revisit the restaurant

Analysis of the bar graph in figure 3 shows that most respondents (81.5%; 75) intend to visit the restaurant again; 15.25 (14) of the respondents stated that they are likely to return and 2 , 17% (2) of the respondents replied that they might visit him again. On the other hand, an individual stated that he would probably never visit the restaurant again and justified such a response that he would hardly return to the place.

Table 4 shows the results of the cross-over of the opinion variable on the attendance with the variables gender and age group and the results of the Fisher test application.

Table 4: Crossing results and Fisher's test of the variable Opinion on the attendance with the variables gender and age group

Variables	Opinion about the service			vp
	Reasonablefo (fe) 3 (3)	Good fo (fe) 55 (55)	Excellent fo (fe) 34 (34)	
Gender				
Male	1(1,5)	26(28,1)	20(17,4)	0,491
Female	2(1,5)	29(26,9)	14(16,6)	
Age group				
Up to 25 years	2(1,3)	21(23,9)	17(14,8)	0,458
Over 25 years	1(1,7)	34(31,1)	17(19,2)	

fo - observed frequency; fe - expected frequency; vp - proof value

From the analysis of table 4 it can be seen that both sexes present mainly the opinion of good service and that more men than women who defended that this service is excellent. As for the age group, there is an equal number of individuals with up to 25 years and over 25 years who consider the service excellent. At a significance level of 5% there is insufficient statistical evidence to state that the opinion on care is dependent on gender and age. Table 5 shows the results of the cross-over of the variable intention to revisit the restaurant with the variables gender and age group and the results of the Fisher test.

Table 5: Crossing results and Fisher's test of the variable Intention to revisit the restaurant with the variables gender and age group

Variables	**Intention to revisit the restaurant**				
	Yes **fo (fe)** 75 (75)	**Probably Yes** **fo (fe)** 14 (14)	**Maybe** **fo (fe)** 2 (2)	**Probably No** **fo (fe)** 1 (1)	**vp**
Gender					
Male	38(38,3)	7(7,2)	1(1)	1(0,5)	0,999
Female	37(36,7)	7(6,8)	1(1)	0(0,5)	
Age group					
Up to 25 years	36(32,6)	3(6,1)	1(0,9)	0(0,4)	0,156
Over 25 years	39(42,4)	11(7,9)	1(1,1)	1(0,6)	

fo - observed frequency; fe - expected frequency

From the analysis of table 5, it can be seen that both sexes present the majority of the intention to return and that in all the options of the intention to return the number of men and women is identical. As for the age group it is verified the majority of individuals of the age groups considered to return. At a significance level of 5% there is insufficient statistical evidence to state that the intention to revisit the restaurant is dependent on gender and age.

Table 6 shows the results of the cross-over of the intention variable to revisit the restaurant with the variable opinion about the attendance and the result of the application of Fisher's test.

Table 6: Crossing results and Fisher's test of the variable Intention to revisit the restaurant with the variable opinion about the service

Variables	**Intention to revisit the restaurant**				
	Yes **fo (fe)** 75 (75)	**Probably Yes** **fo (fe)** 14 (14)	**Maybe** **fo (fe)** 2 (2)	**Probably No** **fo (fe)** 1 (1)	**vp**
Opinion					
Reasonable	2(2,4)	1(0,5)	0(0,1)	0(0,0)	
Good	43(44,8)	10(8,4)	2(1,2)	0(0,6)	0,297
Excellent	30(27,7)	3(5,2)	0(0,7)	1(0,4)	

fo - observed frequency; fe - expected frequency

By analysis of table 6 it is verified that 43 of the individuals who intend to return to visit the restaurant considered the service good and 30 considered excellent, in turn 10 individuals considered the service good but responded that probably will return. At a significance level of 5% there is insufficient statistical evidence to state that the intention of returning to the restaurant is dependent on the opinion about the service. Table 7 presents the Spearman correlation coefficients between the items of the questions that focus on the opinion about the promotions and the classification of various aspects of the restaurant.

Table 7 - Spearman correlation coefficients between the opinion items of the promotions and items of the classification of various aspects of the restaurant

	Booklet promotions	*Price point* Promotions	Brochure promotions	Promotions 1€	Shopkeeper menu	Quality food	Variety products	Sympathy Attendance	Fast service	Prices	Price-quality ratio
Booklet promotions	1	0,701**	0,692**	0,557**	0,705**	0,418**	0,342**	0,214*	0,319**	0,421**	0,458**
Price point Promotions		1	0,850**	0,592**	0,703**	0,369**	0,308**	0,315**	0,360**	0,462**	0,505**
Brochure promotions			1	0,670**	0,729**	0,394**	0,314**	0,267*	0,460**	0,552**	0,539**
Promotions 1€				1	0,624**	0,365**	0,346**	0,191	0,408**	0,349**	0,423**
Shopkeeper menu					1	0,361**	0,376**	0,310**	0,409**	0,500**	0,542**
Quality food						1	0,732**	0,433**	0,528**	0,388**	0,557**
Variety products							1	0,455**	0,476**	0,368**	0,478**
Sympathy Attendance								1	0,618**	0,321**	0,479**
Fast service									1	0,514**	0,539**
Prices										1	0,844**
Price-quality ratio											1

* - significance at 5%; ** - significance at 1%;

The analysis of table 7 shows that the correlations between the items under analysis are at the level of confidence referred (1% and 5%) statistically significant. It should be noted that all coefficients are positive which indicates that greater satisfaction in any promotion leads to greater satisfaction in other promotions and that also greater satisfaction in each promotion leads to better classifications of the various aspects and lastly better classifications in each aspect lead to better ratings on other aspects of the restaurant. In general, the observed correlations reveal moderate relationships between variables, since they are mostly higher than 0.40 and lower than 0.70. It should be noted that below 0.40 are weak correlations although they may be significant. Thus, the strongest correlations occur between: "Price point promotions" and "Promotions in the leaflet"; "Promotions in the leaflet" and "Menu shopkeeper"; "Quality of food" and "Variety of products"; "Prices" and "Value for money".

5. CONCLUSIONS

This paper has made it possible to ascertain some aspects that can help to better understand the opinions of the clients regarding the services provided, from the measurement of customer satisfaction, and thus contribute to improve, with a view to the consumer, the service provided by a fast food restaurant. Regarding the results obtained from the empirical research carried out, it is verified that the majority of respondents are regular customers, intend to return regardless of gender or age group and are satisfied with the promotions made by the restaurant.

It is also verified that they are satisfied with the services that the restaurant provides, although not so much in the case of lower quality-price relations of products that are not in promotion - in this case, prices are higher and the relation quality-price diminishes, hurting customers' perceived satisfaction. A higher variety of products would also be desirable, requiring a little more offer. Thus, it is concluded that, at a general level, it is verified that the service of the restaurant satisfies the customer, regardless of the service, promotions, sex or age group. With this paper it was also attempted to gather customers' opinions or comments so that the restaurant would provide a better service to the client in the future. Most respondents did not comment, but some suggested more variety in baguettes, making them more traditional and having more variety, also for the vegetarians' niche. It is hoped that this paper will help the restaurants in this field in some way to improve some aspects that are important for the clients, ie. improving the restaurant's offer and consequently its performance. Finally, the findings obtained in this research may be regarded of some importance in order to design future lines of research, with the challenge of developing an empirical study that tests and deepens, inter alia, the interactions between customer satisfaction and product quality in relation to different catering services in a broader fashion.

Projeto POCI-01-0145-FEDER-008540

LITERATURE:
1. Ans, V. G., Mattos, E. d., & Jorge, N. (1999). 23 July de 2017: http://www.educadores.diaadia.pr.gov.br/arquivos/File/2010/veiculos_de_comunicacao/CTA/VOL19N3/VOL19N3_20.PDF
2. Beber, S. J. (1999). Obtido a 24 de Julho de 2017, http://www.anpad.org.br/diversos/trabalhos/EnANPAD/enanpad_1999/MKT/MKT29.pdf
3. Dantas, E. b. (2001). Obtido a 15 de Julho de 2017, em http://edmundobdantas.com/arquivos/mestrado.pdf
4. Drucker, P. (1993). Managing in Turbulent Times. New York: Harper & Row
5. Gonçalves, P. M. (2008). Obtido a 10 de Setembro de 2017, de Biblioteca Digital Universidade Fernando Pessoa: http://ufpbdigital.ufp.pt/dspace/handle/10284/1119
6. Guimarães, M. C. (2011). Obtido a 2 de Agosto de 2017: http://www.ufms.br/dea/oficial/JORNADA%20PDF/2001/artigos/43.pdf
7. Kotler, P., Jaya, H. K., & Setiwan, I. (2013). Do Produto e do Consumidor até ao Espírito Humano - Marketing 3.0. Lisboa: Actual Editora.
8. Maslow (1954). Motivation and Personality. Harper & Brothers ed.
9. Meister, A. P. (2008). Pesquisa de satisfação dos clientes do restaurante Vermelho Grill. Obtido a 6 de Março de 2017, em http://www.lume.ufrgs.br/bitstream/handle/10183/18040/000685309.pdf?...1

10. Oliveira, A. R., Pelissari, A. S., Gonzalez, I. V., Fabrini, M. F., & Silveira, R. C. (1998). Obtido a 3 de Março de 2017, em http://www.aedb.br/seget/artigos10/4_Artigo%20Determinantes%20da%20satisfacao%20dos%20clientes%20com%20produtos%20e%20servicos%20de%20uma%20Loja%20Varejista.pdf
11. Pires, A. (1991). Marketing - Conceitos, Técnicas e Problemas de Gestão. Lisboa: Editorial Verbo.
12. Ribeiro, M. A., Schramm, F., & Barbosa, E. A. (2010). Obtido a 23 de Julho de 2017, em http://www.abepro.org.br/biblioteca/enegep2010_tn_sto_125_806_16009.pdf
13. Santos, V. N. (8 de Fevereiro de 2011). Obtido a 20 de Julho de 2017, em http://bdm.bce.unb.br/bitstream/10483/1461/1/2008_ValdecirNunesdosSantos.pdf
14. Solomon, M. R. (2002). O comportamento do consumidor. Bookman.
15. Sousa, F. J. (2011). Satisfação de cliente - o caso de uma empresa industrial. Obtido a 6 de Março de 2017, em https://estudogeral.sib.uc.pt/bitstream/10316/16192/2/Satisfa%C3%A7%C3%A3o%20de%20Clientes_O%20Caso%20de%20Uma%20Empresa%20Industrial.pdf
16. Toledo, J. C. (1994). Obtido em 23 de Julho de 2017, em http://www.scielo.br/pdf/gp/v1n2/a01v1n2.pdf

THE LINKS BETWEEN SERVICE QUALITY, BRAND IMAGE, CUSTOMER SATISFACTION AND LOYALTY IN THE RETAIL INDUSTRY

Claudia Miranda Veloso
GOVCOPP, UNIAG, ESTGA, University of Aveiro, Institute Polytechnic of Bragança, Portugal
claudiamiranda@ipb.pt; cmv@ua.pt

Daniel Magueta
ESTGA, University of Aveiro, Portugal
dmagueta@ua.pt

Humberto Ribeiro
GOVCOPP, ESTGA, University of Aveiro, Portugal
humberto@alumni.dmu.ac.uk

Sandra Raquel Alves
CIC.DIGITAL, Polytechnic Institute of Leiria
raquel.alves@ipleiria.pt

ABSTRACT

In last years the services industry has recorded high growth rates in developing countries, with the retail industry exhibiting a particular highlight. This paper seeks to identify the most critical factors in traditional retail related to service quality that will ensure competitiveness, survival and business success in the future. This research was applied to customers from traditional retail stores in the Centre of Portugal. Tangibility, assurance, empathy, reliability and responsiveness (Service Quality dimensions), brand image, customer satisfaction and loyalty to the traditional trade were the variables considered for this study. A multi-level and hierarchical model was used as a framework to identify and capture the links between customer satisfaction, service quality, brand image and loyalty of customers in the Portuguese traditional trade. The results revealed that service quality is the main determinant of customer satisfaction and corporate image. Furthermore, customer satisfaction, corporate image and service quality significantly affect customer loyalty. This research is of particular significance to the literature in retail and to practitioners as well, since there are only a few studies in this topic applied to the Portuguese traditional retail.
Keywords: Quality Service, Customer Satisfaction, Customer Loyalty, Centre of Portugal, Traditional Retail

1. INTRODUCTION

In the currently time of intense competition, the key to success in service industries is the delivery of high-quality service. In this sense the business organizations pay particular attention to monitoring and improving service quality given that is highly essential contribute to satisfaction and loyalty customer, since they are determinant variables in maximizing profit, market share, and return on investment (Hackl and Westlund, 2000). The quality improvement is the main factor that impacts consumer satisfaction and consumer's purchase intention, in both manufacturing and service industries (Oliver, 1980). Sundry researchers consent that the quality is fundamental to consumer's satisfaction (Cronin and Taylor, 1992; Veloso, Ribeiro, Fernandes and Alves, 2017; Zaibaf, Taherikia and Fakharian, 2012 and Zhang and Prybutok, 2005).

Various organizations focus on service-quality issues to drive customer's satisfaction above the rest (Kumar et al., 2008). So, currently the great challenges for retail managers are to provide and retain the customer satisfaction and loyalty. The specific dimensions of quality service that contributes substantially to customer's satisfaction need to be identified. It is critical for managers of traditional retail store to have a good and clear understanding of exactly what the customers want. It is also important to analyse whether a retail store meets the customer needs and expectations which is measured by aspects like retail service quality, satisfaction and loyalty customer. Thus, retail management can prioritize better their focus on such specific factors, despite of the causes for an initial purchase in a retail store may be due to factors partially outside the control of retail managers, the ability to create a satisfactory experience for the consumer remains, to a considerable degree, in the hands of both the management and the retail staff. Presently, providing quality of service is seen as the way to remain competitive in markets where global competition and technology have turned products and services into commodities (Nadiri and Gunay, 2013). Numerous researchers have investigated the relationship between perceived service quality and customer satisfaction in the services industry (Cronin and Taylor, 1992; Veloso et al., 2017; Zaibaf et al., 2012; Zhang and Prybutok, 2005), confirming that service quality is a significant antecedent of satisfaction. The key to customer satisfaction lies in identifying and anticipating customer needs and especially in being able to satisfy them. Enterprises which are able to rapidly understand and to satisfy customers' needs, make greater profits than those which fail to understand and satisfy them (Dominici and Guzzo, 2010). In this regard, Dabholkar, Shepherd and Thorpe (2000) argue that traditionally, most studiers conclude that customer satisfaction resulting from a particular experience of consumption, leads to an evaluation / attitude about the quality of service over a period of time. However, the reverse situation has stood out as the most relevant. In this sense, improving service quality it is essential for developing efficiency and higher profitability (Anderson and Zeithamal, 1984; Babakus and Boller, 1992; Garvin, 1983). Whereas the quality of service in the retail industry has been extensively researched internationally, there has been little research done in Portugal to examine service quality as a determinant of satisfaction and loyalty of customers in the Portuguese retail industry. The choice of this topic is due to the need for retailers to properly understand whether the service meets customer perceptions in the different dimensions of SERVQUAL, contribute to their satisfaction and loyalty customer, since its are fundamentals for will ensure sustainable competitiveness and profitability of the traditional retail. In order to be successful, especially in the service industry, managers must concentrate on retaining existing customers by implementing effective strategies towards customer satisfaction and loyalty, since the cost of attracting new customers is higher than the cost of retaining existing (Dominici and Guzzo, 2010). The customer satisfaction and loyalty with the service is crucial in the traditional trade. In spite of most customers do not immediately associate a commercial space with a service, the service is one of the main tools in obtaining consumer satisfaction and loyalty (Yuen and Chan, 2010). Retailers need an efficient way to assess the service quality of their store (Simmers and Keith, 2015). However, the focus on customer retention in this area of business is one of the right strategies to generate profits (Sirohi, McLaughlin and Wittink, 1998). Loyalty is an important step in ensuring that consumers perform something that is beneficial to the firm, whether through purchase or simple word of mouth (WOM). It is believed that satisfaction is a consequence of the quality of the service, and guaranteeing it, increases the likelihood of involving the customer and loyalty. Several studies have shown that there is a positive relationship between quality of service and consumer loyalty (Yuen and Chan, 2010). Thus, business organizations need have a good knowledge of the commercials aspects that are important to their customers, only with a deep understanding, is it possible to respond positively to the expectations of customers regarding the services offered (Yuen and Chan, 2010).

To this extent, the strategy for creating competitive advantage resides in providing a high quality of service which results in satisfied customers and customer retention, dimensions which are core for the survival and the future success of the retail industry (Veloso et al. 2017). So, the principal aim of this research is to examine of the antecedents and consequences of customer satisfaction, in traditional trade in the Centre of Portugal. Specifically intend to present a conceptual model used as a framework to identify the dimensions of service quality and examining the interrelationships among customer satisfaction, corporate image, customer loyalty and service quality in the traditional retail industry. In this work, after this present introduction, a review of the main literature on corporate image, customer satisfaction and their customer loyalty is made, then we propose the conceptual model, after presented the findings and discussion, ending with the presentation of the discussion and the conclusion of the research. This study intends to contribute for the development of the literature in the Portuguese traditional retail industry and it is especially relevant for retail managers, since can to help in the survival and the growth of traditional retail stores.

2. THEORETICAL BACKGROUND
2.1. Service Quality
Early studies on service quality defined it as a measure to which a service provides customer needs, and implicates a comparison of customer expectations with their perceptions of actual service performance (Parasuraman, et al., 1985; Parasuraman, et al., 1988). Recent studies described the perceived service quality as an overall judgment about the level of a service provider's performance (Zeithaml, Bitner and Gremler, 2006). Service quality has assumed a major role both in public and private institutions, as an indispensable requirement to customer satisfaction. Lang (2011) finds the quality service as an important determinant of customer satisfaction and word-of-mouth communication. Regarding service quality dimensions, in according to Parasuraman et al. (1985, 1988) there are five dimensions of quality service: tangibility (physical facilities, equipment, and appearance of personnel); reliability (ability to perform the promised service dependably and accurately); responsiveness (willingness to help customers and provide prompt service); assurance (knowledge and courtesy of employees and their ability to inspire trust and confidence); and empathy (caring and individualized attention the firm provides to its customers). These authors, who represent the American school, have designed an instrument for measuring quality of service, called SERVQUAL. Thereby, the SERVQUAL constitute a quality system that will potentially improve functional quality and service performance (Meesala and Paul, 2018). SERVQUAL model has been criticized and discussed extensively. For instance, Cronin and Taylor (1992) observed that the validity of the use of expectations in the SERVQUAL model was called into question when consumers had no well- formed expectations and developed the SERVPERF scale which consists of the same 22 "items" of SERVQUAL, although centred only in measuring consumer perceptions regarding the quality of service. Despite the diversity of studies in many fields, in this study, SERVPERF will be applied to the traditional trade in the Centre of Portugal in a similar manner as that of other studies realized at an international level, in the area of the trade industry (Abd-El-Salam, Shawky and El-Nahas, 2013; Disfani et al., 2017; Durvasula and Lysonski, 2010; Khare, Parveen and Rai, 2010; Martinelli and Balboni, 2012; Tang et al., 2015; Yu and Ramanathan, 2012; Yuen and Chan, 2010). Generally, if service companies take actions that improve these quality dimensions, they will earn the benefits of customer loyalty (Bansal and Taylor, 1999; Zeithaml, Berry, and Parasuraman, 1996). According to Nadiri and Hussain (2005) service quality increases customer satisfaction, stimuluses intention to return, and inspires recommendations. In line with this studies, and based on SERVQUAL and SERVPERF, the following hypotheses are proposed in the present study:

- H_1: The perceived service quality by customers can be seen as a multidimensional construct.

- H$_2$: The perceived service quality by the customers has a positive influence on their satisfaction.
- H$_3$: The perceived service quality by the customers has a positive influence on corporate image.
- H$_4$: Perceived service quality has positive relationship with customer loyalty.

2.2. Customer satisfaction

In the services industry, the customer satisfaction is the outcome of the customer's perception of the value received in a transaction or relationships, where value equals perceived service quality, compared to the value expected from transactions or relationships with competing vendors (Zeithaml, Parasuraman and Berry, 1990). Satisfaction is also considered as a consequence of the customer's post-buy evaluations of both tangible and intangible brand attributes and a key determinant of customer loyalty (Krystallis and Chrysochou, 2014). More value for customer incomes great satisfaction, which can benefit the retail enterprise in the long term (Cronin, Brady and Hult, 2000) and generate higher profits. Customer satisfaction is found to be dependent on the quality of service presented to the customer and is one of the instruments to enhanced value for customers. The major challenges for service industry are service quality and customer satisfaction. According to Gundersen, Heide and Olsson (1996) the central point of customer satisfaction is to identify the crucial attributes, considered by customers as their needs and expectations. The key to customer satisfaction lies in identifying and anticipating customer needs and especially in being able to satisfy them. For Dominici and Guzzo (2010) enterprises which are able to rapidly understand and to satisfy customers' needs, make greater profits than those which fail to understand and satisfy them. Additionally, Sirdeshmukh, et al. (2002), reported that customers' satisfaction has close relationship to brand loyalty as well as service quality. Analogous claim is presented by Hoq and Amin (2010), who postulated that customer satisfaction is the emotional tendency of a customer towards repurchase of products and services offered by a retail store. In order to be successful, especially in the retail industry, managers must concentrate on retaining existing customers by implementing effective strategies towards customer satisfaction and loyalty, since the cost of attracting new customers is higher than the cost of retaining existing ones (Yuen and Chan, 2010). Based on these findings, it is proposed that:

- H$_5$: Customer satisfaction positively influences intention to return.
- H$_6$: Customer satisfaction positively influences word of mouth recommendations.
- H$_7$: Customer satisfaction positively influences on customer loyalty to the staff.

2.3. Brand Image

Several researchers of the area of marketing have widely studied the concept of brand image (Abd-El-Salam et al., 2013; Kim and Kim, 2005; Kim and Lee, 2010; Sahin and Baloglu, 2011; Yu and Ramanathan, 2012). For Kim and Kim (2005) a brand symbolizes the essence of the customers' perceptions of the organizations. Corporate image is defined as the "general impression" left in the customers' mind as a result of accumulative impressions or feelings, attitudes, ideas and experiences with the firm, saved in memory, transformed into a positive/negative sense, retrieved to rebuilding image and recalled when the name of the firm is heard or brought to ones' mind. According to Sahin and Baloglu (2011) corporate image is defined as the perception of customers about a brand or a product labelled with that brand. Different authors consider brand image as an important component of strong brands and a determinant in the obtainment of competitive advantages. An overall assumption is that a promising corporate image will have a positive impact on consumers' behaviour towards the brand, such as the opportunity to command premium prices, buyers who are more loyal, and more positive word-of-mouth reputation (Martenson, 2007).

Some researchers developed in last years, have tested the effect of corporate image on customer satisfaction and loyalty (Kim and Lee, 2010; Yu and Ramanathan, 2012). Their empirical findings showed that corporate image plays the important role in founding and retaining customer loyalty in the markets. Additionally, these authors found that customer satisfaction and corporate image perceptions positively influence service loyalty, with satisfaction having a greater influence on loyalty than image. Thus, corporate image is believed to create a positive effect on customers' satisfaction. When customers are satisfied with the service provided of company, their attitude toward the company is enhanced (Srivastava & Sharma, 2013). Based on the reported research, it is proposed:

- H_8: Corporate image has positive relationship with customer satisfaction.
- H_9: Corporate image has positive relationship with customer loyalty.

2.4. Customer Loyalty

Customer loyalty has been usually defined as occurring when customers repetitively buying goods or services over time and retain positive attitudes towards the enterprise delivering the goods or services (Yuen and Chan, 2010). Customers frequently develop an attitude toward purchasing based on a prior service experience or, still, this attitude can also be influenced by previous information, based on the image of the retail in the market and even by word of mouth (WOM recommendation). With reference to the previous conception, customer loyalty has been usually defined as a combination of attitudes and behaviour that becomes a profoundly held commitment to repurchase or support a preferred product/service consistently in the future (Oliver, 1999). The literature suggests behavioural intentions as a construct which permits the evaluation of customer loyalty. These are behaviours related to the intention to repurchase and even to the intention of recommending the product/service (Sumaedi and Yarmen, 2012; Yuen and Chan, 2010; Zeithaml, et al., 1990). Some studies developed in service industry have found the positive relationship between perceived service quality and loyalty (Wong, Dean, and White, 1999). In this sense, behavioural intentions can be define as the customer's judgment about the likeliness to repurchase in this firm or the willingness to recommend the firm to others. We conceptualize behavioural intentions as a higher-order construct consisting of (1) positive word of mouth (Boulding, Kalra, Staelin and Zaithaml, 1993), (2) willingness to recommend (Parasuraman, Zeithaml and Berry, 1994), and (3) intentions to continue buying from a particular service provider (Bowen and Shoemaker, 1998). Based on previous definition, behavioural intention in this study may be described as a stated likelihood to repurchase in the retail stores in the Centre of Portugal and to recommend the traditional store to family, friends and others in the future. There is also ample evidence of the influence of service quality on behavioural intentions, a huge body of research has demonstrated the significant relationship between service quality and customers' behavioural intentions (Parasuraman, Zeithaml and Malhorta, 2005; Sousa and Voss, 2010). In a multi-industry study, the authors later provided evidence of the significant effect of perceived service quality on customers' favourable behavioural intentions, such as repurchase, tendency to say positive things and recommend the company. In addition Cronin and Taylor (1992), Zeithaml et al., (1996) and Fullerton (2005), find a favourable association between service quality and repurchase intentions, say positive things, and willingness to recommend. Therefore, we expect customers who perceive the quality of the service as high to be more likely to demonstrate loyalty intentions. The positive perceptions of service quality enhance the possibility of customers being dedicated in supporting the company and developing and strengthening loyalty behaviour (Yuen and Chan, 2010). The customer loyalty is perceived like as behavioural intention and several scholars consent it is a construct of three levels, namely person-to-person loyalty and person-to-firm loyalty (intention return) and recommendation (WOM). Yuen and Chan (2010) approved the relationship between salesperson loyalty and firm loyalty and they confirmed that the former will carry the latter.

Moreover, Oh (1999) found a positive and significant relationship between intention to return and WOM recommendations. Based on these findings, it is proposed that:

- H_{10}: Intention to return positively influences WOM recommendations.
- H_{11}: Staff Loyalty positively influences Intention to return

According to this theoretical background, the aim of this study is to, as Figure 1 indicates, propose a model that consists of evaluating the impact of: (1) perceived service quality directly contribute to customer satisfaction, corporate image and customer loyalty; (2) corporate image and customer satisfaction directly contribute to customer satisfaction; (3) corporate image directly contribute to customer satisfaction; (4) customer satisfaction directly influences the intention to return, the loyalty to staff and WOM recommendation (Word-of-Mouth communication intention) and (5) the loyalty to staff has a direct influence on the intention to return and this has a direct impact on WOM recommendation.
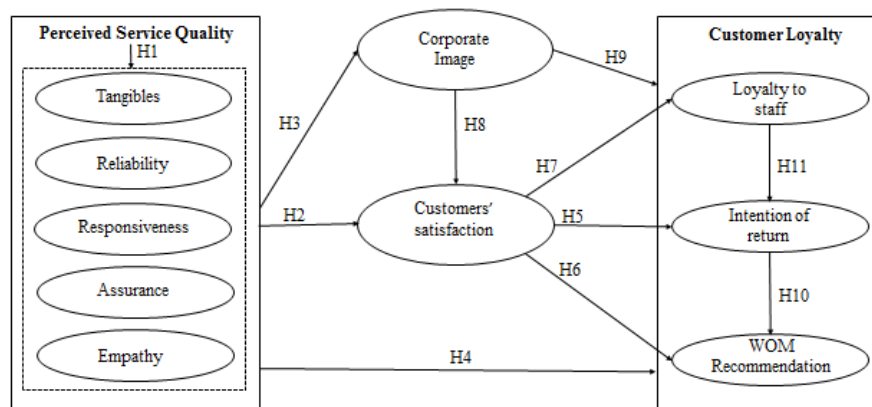

Figure 1: Research model

3. METHODOLOGY

A questionnaire was designed as the survey instrument, which were included all the constructs of the proposed model. The questions in the questionnaire were based on a review of the literature in the area of the trade industry, described above in the theoretical background. This study was applied to customers from of traditional retail stores in the centre of Portugal during the firstly half of 2017. It was used a non-probabilistic sampling using convenience technique. The questionnaires were distributed online and the answers came from several cities and places of the central of Portugal. In this study, respondents were required to fill out a three-page three sections. The first section consisted of a standard demographic profile of respondents. The second section contained the characterization of purchase process. The last section includes the statements of dimensions and their sub dimensions. The measurement items to measure primary and sub-dimensions of service quality were adapted from several researchers (Cronin and Taylor, 1992; Dabholkar et al., 1996; Wu, Lin and Hsu, 2011) and a series of items focusing on the behavioural intentions, customer satisfaction, perceived value and corporate image, which were adapted on the basis of several researchers' results (Nadiri and Gunay, 2013; Nikhashemia, et al., 2016; Ryu, Han and Kim, 2008; Wu et al., 2011; Wu, 2013; Yu and Ramanathan, 2012; Yuen and Chan, 2010; Zeithaml et al., 1996). Respondents were asked to use a five-point Likert-type scale (where 5–point scales anchored 1 = "strongly disagree" and 5 = "strongly agree") to record their perceptions. Construct reliability was assessed by using the Cronbach's alpha coefficient.

Reliabilities ranged from 0.728 to 0.961, suggesting that the construct could be used with confidence. For the descriptive analysis it was used absolute and relative frequency tables. The Spearman correlation coefficient it was used to measure the intensity of the linear correlation between variables. Multiple linear regression was used in order to estimate models that could identify the determinants of the behaviour of the variables under analysis. The significance level of 5% was assumed.

4. DATA ANALYSIS AND FINDINGS
4.1. Demographic Profile
The sample of the Centre of Portugal was composed of total 249 respondents which 51% (127) were females and 49% (122) were males. The maximum number of responses was obtained from 35 - 44 years old with 35.7% (89) and the second age group from 45 - 54 years, with 22.5% (56) responses. Most respondents 53.8% (134), were married or in an unmarried partner, 39.4% (98) were single. It is verified most of respondents had secondary level qualifications, as 49.4% (123), on the other hand, 27.3% (68) were graduates; 4.4% (11) had postgraduate degrees; 8% (20) had a master's degree and 8% (20) were PhDs. As for the professional occupation mostly, 65.5% (163) were employed. In the activity sector, banking stood out with 26.9% (67) of the respondents, followed by education sector with 14.1% (35) of the individuals. Regarding the average annual income, it is observed that 32.5% (81) of the respondents earned between 7001€ to 20000€; 27.7% (69) earned between 20001€ to 40000€ and 18.5% (46) received annually between 40001€ to 80000€.

4.2. Purchase Process
The obtained results show that 99.9% of the respondents purchases in traditional trade. It was verified that 82.3% (205) of the individuals had made purchases in traditional trade there is more than 12 months. The most popular frequency of purchases registered was weekly, 38.6% (96) of the respondents go to the traditional trade once a week and 12.9% (32) do it daily. As for the average annual spending on purchases in the traditional trade, it was found that 32.1% (80) of the respondents spend under 100€ and that 36.5% (91) spend more than 400€ annually.

4.3. Correlation and Regression Analyses
The Table 1 shows the internal consistency of the dimensions and sub-dimensions of the scale used. It is verified that all the dimensions and sub-dimensions have internal consistency at least good, because in some situations (Alpha of Cronbach higher to 0,90) the internal consistency is very good, suggesting that the construct could be used with confidence.

Dimensions	Subdimensions	Cronbach 's Alpha
1 - Service Quality (SQ)	1.1; 1.2; 1.3; 1.4; 1.5	0,961
	1.1 - Tangibles	0,854
	1.2 - Reliability	0,842
	1.3 - Assurance	0,924
	1.4 - Responsiveness	0,728
	1.5 - Empathy	0,884
2 - Customer Satisfaction		0,877
3 - Customer Loyalty	4.1;4.2;4.3	0,907
	4.1 - Wow	0,952
	4.2 - Intention to return	0,863
	4.3 - Loyalty to Staff	------
4 - Image		0,888

Table 1: Composition of scale dimensions/ sub-dimensions and internal consistency

Analysing the Table 2 shows that the sub-dimensions that constitute Service Quality (SQ) present strong and direct correlations with the SQ, namely reliability, assurance and empathy sub-dimensions with very strong correlation coefficients. Thus, this supports the first hypothesis.

Dimensions	Service Quality
Tangibles	0,858
Reliability	0,917
Assurance	0,907
Responsiveness	0,896
Empathy	0,916

Table 2: Spearman correlation between SQ and its constituent dimensions

The Table 3 shows that the dimensions that constitute Customer Loyalty present strong and direct correlations with the same, namely the dimensions: WOM and intention to return. The staff loyal contributes least to the behavioural intentions (customer loyalty).

Dimensions	Customer Loyalty
WOM	0,893**
Intention to Return	0,950**
Loyalty to Staff	0,679**

*Table 3: Spearman's correlation between Customer Loyalty and its constituent dimensions (** 1% significant level)*

In the Table 4 it is verified that all scale dimensions have positive statistically significant correlation coefficients.

	Service Quality	Customer Satisfaction	Customer Loyalty	Image
Service Quality	1	0,827**	0,734**	0,632**
Customer Satisfaction		1	0,774**	0,564**
Customer Loyalty			1	0,639**
Image				1

Table 4: Spearman correlation between dimensions of scale

The correlation between Service Quality and Customer Satisfaction is strong; as well as between Customer Loyalty versus Service Quality and between Customer loyalty versus service quality and customer satisfaction. However, the correlations of the brand image dimension with the other dimensions were of moderate intensity. Ordinary least squares regression was used to analyse each path in the conceptual model. Statistical assumption tests were assessed for each of the six regression models prior to the analysis in order to ensure a robust result. The results of the hypotheses tests are presented in Table 5. The application of the multiple linear regression model allowed us to obtain a parsimonious model that makes it possible to predict the dependent variable from a set of regressors (independent variables).

Table following on the next page

Dependent variable	Independent variables	Adjusted R^2	F value (p value)	Standardized coefficients	t value (p value)
Customer Satisfaction	Constant	0,711	305,833 (0,000)	-0,488**	-2,737(0,007)
	Service Quality			0,786***	17,363(0,000)
	Image			0,086	1,901(0,058)
WOM	Constant	0,721	161,438 (0,000)	0,230	1,252(0,212)
	Customer Satisfaction			0,235**	3,428(0,001)
	Service Quality			0,244***	3,670(0,000)
	Image			-0,006	-0,119(0,905)
	Intention to Return			0,454***	8,459(0,000)
Intention to Return	Constant	0,665	121,240 (0,000)	0,103	0,469(0,639)
	Customer Satisfaction			0,453***	6,463(0,000)
	Service Quality			0,078	1,071(0,285)
	Loyalty to staff			0,264***	6,314(0,000)
	Image			0,194***	3,887(0,000)
Loyalty to Staff	Constant	0,315	29,575 (0,000)	-0,474	-0,955(0,341)
	Customer Satisfaction			-0,012	-0,116(0,908)
	Service Quality			0,004	0,040(0,968)
	Image			0,070	0,959(0,338)
	Intention to Return			0,532***	6,314(0,000)
Customer Loyalty	Constant	0,675	172,531 (0,000)	0,052	0,264(0,792)
	Customer Satisfaction			0,514***	7,604(0,000)
	Service Quality			0,180*	2,516(0,012)
	Image			0,212***	4,385(0,000)
Image	Constant	0,428	186,623 (0,000)	0,485*	1,993(0,047)
	Service Quality			0,656***	13,661(0,000)

Table 5: A summary of regression models

In the first regression model which tests the influence of service quality and corporate image on the variation of customer satisfaction is tested. The model obtained is at a statistically significant level of significance of 1% (F=305,833; p value < 0,001), that is, the variation of customer satisfaction is explained significantly by the estimated model. By the application of the test t, we conclude that service quality (β=0,786; p value < 0,001) determine significantly the behaviour of customer satisfaction. The Corporate Image regression does not present a statistically significant influence on the variation of customer satisfaction. The adjusted coefficient of determination reveals that the model presented explains, on average, about 71% of the variation of customer satisfaction. Consequently, this model supports the second hypothesis and refutes the octave hypothesis. The second regression model that relates WOM with the regressors: customer satisfaction, service quality, brand image and intention to return is at a significance level of 1% statistically significant. The determinants of the model influenced significantly the variation of WOM, as the test t, customer satisfaction (β=0,235; p value<0,01); service quality (β=0,244; p value<0,001) and intention to return (β=0,454; p value<0,001) are statistically significant. The estimated model explains, on average, about 72,1% of the WOM variation. The Image presents negative and significant influence in the WOM, this can be explained given that Image alone does not lead to recommendation, however when associated with service quality presents positive influence in the customer loyalty. Thus, this model supports the sixth and the tenth hypothesis. In the third regression model that relates intention to return with the regressors: customer satisfaction, service quality and corporate image is at a significance level of 1% statistically significant. The followings determinants of the model influenced significantly the variation of intention to return, as the test t, customer satisfaction with coefficient β = 0,453 and p-value <0,001, loyalty to staff with coefficient β = 0,264 and p-value <0,001, and brand image with coefficient β=0,248 and p-value<0,001 are statistically significant. The estimated model explains, on average, about 66,5% of the intention to return. The service quality regressor is not presented significantly in the variation of intention to return. Thus, this model supports the fifth and the eleventh hypothesis. The fourth regression model that relates loyalty to staff with the regressors: customer satisfaction, service quality, corporate image and intention to return is at a

significance level of 1% statistically significant. The estimated model explains, on average, about 31,5% of the loyalty to staff. The Intention to return influenced significantly the variation of loyalty to staff, with the test t (β=0,532; p value<0,001) is statistically significant. The others regressors of the model, namely: customer satisfaction, service quality and corporate image are not presented significantly in the variation of loyalty to staff. Thus, this model refutes the seventh hypothesis. The fifth regression model that relates customer loyalty with the regressors: customer satisfaction, service quality and corporate image is at a significance level of 1% statistically significant. The determinants of the model influence significantly the variation of customer loyalty, because by the test t customer satisfaction with coefficient β = 0,514 and p-value <0,001; service quality with coefficient β = 0,180 and p-value <0,05; brand image with coefficient β = 0,212 and p-value <0,001; are statistically significant. The estimated model explains, on average, about 67,5% of the customer loyalty variation. Therefore, this model supports the fourth and ninth hypothesis. The sixth regression model that relates corporate image to the service quality regressor is at a significance level of 1% statistically significant. The estimated model explains, on average, about 42,8% of the corporate image variation. By the application of the test t, the service quality with coefficient β = 0,656 and p-value <0,001, can be conclude that, determines significantly corporate image behaviour. Therefore, this model supports the third hypothesis.

5. DISCUSSION AND CONCLUSIONS

This research achieved the proposed aim since it has identified the dimensions of service quality and examined the links between customer satisfaction, brand image, service quality and customer loyalty in Portuguese traditional trade. In addition to investigate the customer satisfaction, the perceived service quality and the brand image as determinants of the customer loyalty in the traditional commerce in the Centre of Portugal. So, the model proposed was allowed to evaluate the hypotheses presented, as well as it contributes to the retail managers better understand the implications of the dimensions of service quality, customer satisfaction and of brand image on customer loyalty, and the consequently on the profitability of the retail stores. The findings from exploratory factor analysis indicate that service quality consists of five dimensions (tangibles, reliability, responsiveness, assurance and empathy). For traditional trade in the Centre of Portugal, reliability, assurance and empathy play an important role in determining service quality, and are followed by responsiveness and tangibles. The results of this research showed that service quality has a direct influence on corporate image, which in turn, influence customer loyalty. The positive relationship between service quality and brand image suggests that customers who received high service quality during service delivery would form a favourable image of the traditional retail store. Nonetheless, the brand image does not influences directly the customer satisfaction, thus, H_8 is not supported. However, increased service quality then results in greater brand image that results indirectly in greater customer loyalty, based on the positive relationship between image and customer loyalty. Also, the study revealed that the service quality is a determinant of customer satisfaction and this is indirectly influence customer loyalty. The level of satisfaction of the customers positively affects their word of communication about traditional stores retail of the centre of Portugal and the customers' intentions to revisit a store. Nevertheless, customer satisfaction does not directly influence loyalty to staff. Findings found are also consistent with the literature. In other researches such as this, satisfied customers have higher levels of intention for revisiting traditional stores, loyal customer to staff has intention to revisit the traditional retail store and their satisfaction levels induce them to provide positive word of mouth communication to friends or families. Moreover, the findings of the corporate image, customer satisfaction and of the dimensions of service quality and of it relative importance can provide useful insights for how managers and owned should allocate resources in the traditional retail stores.

Also, traditional trade management should structure their infrastructure, processes, operations and resource allocation in terms of the relative importance of the service quality dimensions to their target at specific customers. Retail service providers need to recognize the importance of service quality dimensions in order of their significance, and implement appropriate strategy for competitive advantage over domestic and international players competing for share of an expanding consumer base (Mahfooz, 2014). Furthermore, the results indicate, traditional retail stores should invest in strategies and actions that improve customer's satisfaction and brand image. Brand image, along with satisfaction, plays a key role in enhancing customer loyalty which in turn grades in store profitability. Thus, managers of traditional retail stores should invest in actions with the potential to improve the brand image. Moreover, the traditional retail stores should continue their emphasis on service and making a more personalized experience for their customers. Great service has the potential to considerably development perceived utility for customers (Disfani et al., 2017). Since the results suggest that satisfaction directly affects loyalty toward traditional retail stores in centre of Portugal, in this way the principal attention of traditional retail should be on increasing satisfaction. The customers of the traditional retail stores appreciate benefits such as the empathy, reliability and assurance. As long as these expectations are met, it appears that service quality will play a significant role in affecting loyalty behaviour. In this sense, this study can aid the managers of the traditional retail to identify that both service quality and customer satisfaction and also brand image directly affect customer loyalty. Consequently, store management should make more effort to increase perceptions of satisfaction, of corporate image and of service quality that gives to the market, whether through communication actions or interaction with society where operate, in order to build the customer loyalty and consequents positives effects in profitability and competitiveness of the traditional trade. Moreover, this study contributes to the development of the literature, helping to offer views for politicians' wealth creation and economic growth, and all the more for that the retail managers promote to survival and growth of traditional trade. Indubitable from a practitioners' point of view, the understanding of the determinants that influence customers´ satisfaction and loyalty, on the one hand, may contribute to the retail manager's development when establishing strategies and contribute to the improvement of services provided by the traditional retail stores and consequently to help them get to know each other better and move toward the path of quality service, in a continuous search of the customer satisfaction and loyalty, translated into excellent organizational performance and higher profitability.

Projeto POCI-01-0145-FEDER-008540

LITERATURE:
1. Abd-El-Salam, E. M., Shawky, A. Y., & El-Nahas, T. (2013). The impact of corporate image and reputation on service quality, customer satisfaction and customer loyalty: testing the mediating role. Case analysis in an international service company. Journal of Business and Retail Management Research, 8(1), pp. 130-153.
2. Al Khattab, S. A. & Aldehayyat, J. S. (2012). Perceptions of Service Quality in Jordanian Hotels. International Journal of Business and Management, Volume 6(7), pp. 226-233.
3. Anderson, E. W. & Sullivan, M. W. (1993). The antecedents and consequences of customer satisfaction for firms. Marketing Science, Volume 12(2), pp. 125-143.
4. Anderson, C. & Zeithamal, C.P. (1984). Stage of the Product Life Cycle, Business Strategy, and Business Performance. Acad. Manag. J. 27, pp. 5–24.
5. Babakus, E. & Boller, G.W. (1992). An empirical assessment of the Servqual scale. J. Bus. Res. 24 (3), pp. 253–268.
6. Bansal, H. S. & Taylor, S. F. (1999).The service providers witching model (SPSM): a model of consumers witching behavior in the services industry. J. Serv. Res. 2 (2), pp. 200–218.
7. Bennett, R. & Rundle-Thiele, S. (2002). A comparison of attitudinal loyalty measurement approaches. The Journal of Brand Management, Volume 9(3), pp. 193-209.
8. Boulding, W., Kalra, A., Staelin, R., & Zaithaml, V. A. (1993). A dynamic process model of service quality: From expectations to behavioral intentions. Journal of Marketing Research, 30(1), 7-27.
9. Bowen, J. T., & Shoemaker, S. (1998). Loyalty: A strategic commitment. Cornell and Hotel Restaurant Administration Quarterly, 39(1), 12-2
10. Bravo, R., Montaner, T. & Pina, J. (2009). The role of bank image for customers versus non-customers. Internatinal Journal of Bank Marketing, Volume 27(4), pp. 315-334.
11. Cronin, J. J., Brady, M. K. & Hult, G. T. M. (2000). Assessing the effects of quality, value, and customer satisfaction on consumer behavioral intentions in service environments. Journal of Retailing, Volume 76(2), pp. 193-218.
12. Cronin, J. & Taylor, S. (1992). Measuring service quality: a reexamination and extension. Journal of Marketing, Volume 56(3), pp. 55-68.
13. Dabholkar, P., Shepherd, C. & Thorpe, D. (2000). A comprehensive framework for service quality: An investigation of critical conceptual and measurement issues through a longitudinal study. Journal of Retailing, Volume 76(2), pp. 139-173.
14. Dabholkar, P., Thorpe, D. I. & Rentz, J. O. (1996). A measure of service quality for retail stores: Scale development and validation. Journal of the Academy of Marketing Science, Volume 24(1), pp. 3-16.
15. Disfani, O., Mantrala, M., Yusta, A. & Ruiz, M. (2017). The impact of retail store format on the satisfaction-loyalty link: Na empirical investigation. Journal of Business Research, Volume 77, pp. 14-22.
16. Dominici, G. & Guzzo, R. (2010). Customer satisfaction in the hotel industry: a case study from Sicily. International Journal of Marketing Studies, Volume 2(2), pp. 3-12.
17. Durvasula, S. & Lysonski, S. (2010). Diagnosing service quality in retailing: the case of Singapore. Journal International Business and Entreprenurship Development, Volume 5 (1), pp. 2-17.
18. Fullerton, G. (2005). The impact of brand commitment on loyalty to retail service brands. Canadian Journal of Administrative Sciences, 22(2), 97-110.
19. Garvin, D.A. (1983). Quality on the Line. Harv. Bus. Rev. 61, pp. 65–73.
20. Gundersen, M., Heide, M. & Olsson, U. (1996). Hotel guest satisfaction among business travelers: what are the important factors?. The Cornell Hotel and Restaurant Administration Quarterly, Volume 37(2), pp. 72-81.

21. Hackl, P. & Westlund, A. (2000). On structural equation modeling for customer satisfaction measurement. Total Quality Management, 11 (4/5/6), S820–S825.
22. Hoq, M. Z. & Amin, M. (2010). The role of customer satisfaction to enhance customer loyalty. African Journal of Business Management, Volume 4(12), pp. 2385-2392.
23. Jayasankaraprasad, C. & Kumar, P. V. V. (2012). Antecedents and consequences of customer satisfaction in food & grocery retailing: An empirical analysis. Decision, Volume 39(3), pp. 101-140.
24. Keller, K., (1993). Conceptualizing, measuring, and managing customer-based equity. Journal of Marketing, Volume 57(1), pp. 1-22.
25. Khare, A., Parveen, C. & Rai, R. (2010). Retailer behavior as determinant of service quality in Indian retailing. Journal of Retail & Leisure Property, Volume 9 (4), pp. 303-317.
26. Kim, H.-B. & Kim, W. (2005). The relationship between brand equity and firms performance in luxury hotels and chain restaurants. Tourism Management, Volume 26, pp. 549-560.
27. Kim, Y.-E. & Lee, J.-W. (2010). Relationship between corporate image and customer loyalty in mobile communications service markets. Africa Journal of Business Management, Volume 4(18), pp. 4035-4100.
28. Knox, S. D. & Denison, T. J. (2000). Store loyalty: Its impact on retail revenue. An empirical study of purchasing behaviour in the UK. Journal of Retailing and Consumer Services, Volume 7(1), pp. 33-45.
29. Krystallis, A. & Chrysochou, P. (2014). The effects of service brand dimensions on brand loyalty. Journal Retail. Consum. Serv. 21(2), pp. 139–147.
30. Kumar, V., Smart, P.A., Maddern, H. & Maull, R.S. (2008). Alternative perspective on service quality and Customer satisfaction: the role of BPM. Int. J. Serv. Ind. Manag.19 (2), 25–35.
31. Lim, K. & O'Cass, A. (2001). Consumer brand classifications: an assessment of culture-of-origin versus country-of-origin. Journal of Product & Brand Management, Vol. 10, No. 2, pp. 120–136. , Volume 10(2), pp. 120-136.
32. Mahfooz, Y. (2014). Relationship between Service Quality and Customer Satisfaction in Hypermarkets of Saudi Arabia. International Journal of Marketing Studies, 6 (4), 10-22.
33. Martenson, R. (2007). Corporate brand image, satisfaction and store loyalty: A study of the store as a brand, store brands and manufacturer brands. International Journal of Retail & Distribution Management 35, no. 7: 544–55., Volume 35(7), pp. 544-555.
34. Meesala, A. & Paul, J. (2018). Service quality, consumer satisfaction and loyalty in hospitals: Thinking for the future. Journal of Retailing and Consumer Services, 40, pp 261-269.
35. Monteiro, A., & Veloso, C. (2013). Measuring service quality, brand image, perceived value, customers' satisfaction and behavioural intentions in the hotel industry: a study of the hotel in the North of Portugal. 6th Annual EuroMed Conference of the EuroMed Academy of Business (pp. 1568-1582). Cascais, Portugal: ISBN: 978-9963-711-16-1.
36. Nadiri, H., & Gunay, N. (2013). An emperical study to diagnose the outcomes of customers' experiences in trendy coffee shops. Journal of Business Economics and Management, 14 (1), 22-53.
37. Nadiri, H. & Hussain, K. (2005). Perceptions of service quality in North Cyprus hotels.. International Journal of Contemporary Hospitality Management, Volume 17(6/7), pp. 469-480.
38. Nikhashemia, S. R., Tarofderb, A. K., Gaura, S. S., & Haque, A. (2016). The Effect of Customers' Perceived Value of Retail Store on Relationship between Store Attribute and Customer Brand Loyalty: Some Insights from Malaysia. Fifth International Conference On Marketing And Retailing.

39. Oh, H. (1999). Service quality, customer satisfaction, and customer value: A holistic perspective. International Journal of Hospitality Management, Volume 18(1), pp. 67-82.
40. Oliver, L. (1999). Whence consumer loyalty?. Journal of Marketing, 63 (4), 33-44.
41. Oliver, R. L. (1980). A cognitive model of the antecedents and consequences of satisfaction decisions. Journal of Marketing Research, Volume 460-469, p. 16.
42. Parasuraman, A., Zeithaml, V. & Berry, L. (1985). A conceptual model of service quality and its implications for future research. Journal of Marketing, Volume 49(1), pp. 41-50.
43. Parasuraman, A., Zeithaml, V. & Berry, L. (1988). SERVQUAL: A multiple-item scale for measuring consumer perceptions of service quality. Journal of Retailing, Volume 64(1), pp. 12-40.
44. Parasuraman, A., Zeithaml, V. A. & Berry, L. (1994). Reassessment of expectations as a comparison standard in measuring service quality: implications for further research. Journal Marketing, pp. 111–124.
45. Parasuraman, A., Zeithaml, V. & Malhorta, A. (2005). E-S-QUAL: a multiple-item scale for assessing electronic service quality. Journal of Retailing, Volume 64(1), pp. 12-40.
46. Ruy, K., Han, H., & Kim, T.-H. (2008). The relationships among overall quick-casual restaurant image, perceived value, customer satisfaction, and behavioral intentions. Management Hospitality, 27, 459-469.
47. Sahin, S. & Baloglu, S. (2011). Brand personality and destination image of Istanbul. An International if Tourism and Hospitality Research, Volume 22(1), pp. 69-88.
48. Simmers, C., & Keith, N. (2015). Measuring retail store service quality: the disparity between the retail service quality Scale (RSQS) and Comment Cards. International Academy of Marketing Studies Journal, 19 (2), 117-126.
49. Sirdeshmukh, D., Singh, J. & B., S. (2002). Consumer trust, value, and loyalty in relational exchanges. The Journal of Marketing, Volume 66(January), pp. 15-37.
50. Sirohi, N., McLaughlin, E. W., & Wittink, D. R. (1998). A model of consumer perceptions and store loyalty intentions for a supermarket retailer. Journal of Retailing, 223 - 245.
51. Sousa, R., & Voss, C. (2010). The impacts of e-service quality on customer behavior in multi-channel e-services. Total Quality Management & Business Excellence, 23(7/8), 769-787.
52. Srivastava, K. & Sharma, N. (2013). Service Quality, Corporate Brand Image, and Switching Behavior: The Mediating Role of Customer Satisfaction and Repurchase Intention. Services Marketing Quarterly, Volume 13, p. 274–291.
53. Sumaedi, S., Bakti, I. & Yarmen, M. (2012). The empirical study of public transport passengers' behavioral intentions: the roles of service quality, perceived sacrifice, perceived value, and satisfaction (case study: paratransit passengers in jakarta, indonesia). International Journal for Traffic and Transport Engineering, Volume 2(1), pp. 83-97.
54. Tang, Y., Stanworth, J., Chen, W., Huang, S., & Wu, H. (2015). Toward a measure of Chinese hypermarkt retail service quality. Total Quality Management, 26 (3), 327-338.
55. Veloso, C.; Ribeiro, H.; Alves, S.; Fernandes, P. (2017). Determinants of Customer Satisfaction and Loyalty in the Traditional Retail Service, in Economic and Social Development Book of Proceedings, pp. 470-485.
56. Wu, H. (2013). An empirical study of the effects of service quality, perceived value, corporate image and customer satisfaction on behavioral intentions in the Taiwan quick service restaurant industry. Journal of Quality Assurance in Hospitality & Tourism, Volume 14(4), pp. 364-390.
57. Wu, J., Lin, Y. & Hsu (2011). An empirical analysis of synthesizing the effects of service quality, perceived value, corporate image and customer satisfaction on behavioral intentions in the transport industry: a case of Taiwan high-speed rail. Innovative Marketing, Volume 7(3), pp. 83-100.

58. Yuen, E. F. & Chan, S. S. (2010). The Effect of Retail Service Quality and Product Quality on Customer. Journal of Database Marketing & Customer Strategy Management, Volume 17(3), pp. 222-240.
59. Yu, W. & Ramanathan, R. (2012). Retail service quality, corporate image and behavioural intentions: the mediating effects of customer satisfaction. The International Review of Retail, Distribution and Consumer Research, Volume 22(5), pp. 485-505.
60. Zaibaf, M., Taherikia, F. & Fakharian, M. (2013). Effect of perceived service quality on costumer satisfaction in hospitality industry: Gronroos' service quality model development. Journal of Hospitality Marketing & Management, Volume 22(5), pp. 409-504.
61. Zeithaml, V. A., Bitner, M .J. & Gremler, D. D. (2006). Services Marketing: Integrating Customer Focus Across The Firm, 4 ed. McGraw Hill: New York, NY .
62. Zeithaml, V., Berry, L. & Parasuraman, A. (1996). The behavioral consequences of service quality. Journal of Marketing, Volume 60(2), pp. 31-46.
63. Zeithaml, V., Parasuraman, A. & Berry, L. (1990). Delivering Quality Service, New York: The Free Press.
64. Zhang, X., & Prybutok, V. (2005). A Consumer Perspective of E-Service Quality. IEEE Transactions on Engineering Management, 52 (4), 461-477.

A SHIFT SHARE APPROACH FOR EVALUATING THE TRADE LINKS BETWEEN PANAMA AND THE EUROPEAN UNION

Marian Morales Mejia
Institute Polytechnic of Bragança, Portugal
marian.moralesm@gmail.com

Claudia Miranda Veloso
GOVCOPP, UNIAG, ESTGA, University of Aveiro, Institute Polytechnic of Bragança,
Portugal
claudiamiranda@ipb.pt; cmv@ua.pt

Antonio Duarte
UNIAG, Institute Polytechnic of Bragança, Portugal
aduarte@ipb.pt

Humberto Ribeiro
GOVCOPP, ESTGA, University of Aveiro, Portugal
humberto@alumni.dmu.ac.uk

Sandra Raquel Alves
CIC.DIGITAL, Polytechnic Institute of Leiria
raquel.alves@ipleiria.pt

ABSTRACT

This research aims to characterize the evolution of the trade relations between Panama and the European Union, specifically analysing Panama exports to the European Union market. To achieve this objective, the Shift-Share analysis methodology was applied to the most recent data on Panama-European Union trade available in the Statistical Office of the European Communities (Eurostat), comprehending the period between 2011 and 2016. Based on the analysis conducted, it was possible to observe that exports from Panama to the European Union experienced a slight average annual growth of 9.23%; and also that the main destination countries, which represent 96.48% of exports, were: Germany, Belgium, Cyprus, Denmark, Spain, France, Grace, Holland, Italy, Poland, United Kingdom and Sweden. Furthermore, the products which represent 95.19% of Panama exports were: other vegetables, fresh or frozen, fresh fruit; beverages; stimulants and spices; perishable foodstuffs; animal feeding stuffs and foodstuff waste; oil seeds and oleaginous fruit and fats; other machinery apparatus and appliances; leather, textiles and clothing; other manufactured articles and miscellaneous articles. A decrease in the exports of the following products was captured: oilseeds and oil fats, transport equipment, miscellaneous items and other products. According to the static Shift-Share analysis made, exports from Panama to the European Union were mostly affected by decreases in exports to countries such as Belgium, Spain, Greece, Italy, Poland, and Sweden, due to regional effects. Other decreased have been found in other EU countries as well. Conversely, Panama's exports to Cyprus, Denmark and the Netherlands registered growth mainly due to the regional component (growth of exports from Panama to that country); France recorded growth due to the effects of the structural component (growth in products exported by Panama); Germany and the United Kingdom recorded growth due to the effects of the national component (growth of exports to the EU). Besides the evidence shown and discusse, this research can be regarded as a significant contribution to the existing statistics on exports from

Panama to the European Union and can be more broadly used as a tool to delineate corporate or national strategies to boost trade between two regions.
Keywords: *International Trade, Panama, European Union, Shift-Share analysis, AACUE*

1. INTRODUCTION

Currently, due to the phenomena of globalization and international trade, the role of economic integration between countries and regions is increasingly evident in order to reduce or eliminate existing trade barriers and boost trade. In this same context, it is important to mention that economic integration takes place in different ways: free trade area, customs union, common market, economic union, economic community, etc. Being a pioneer in this regard, the European Union (González, Moreno, & Rodríguez, 2015). Examples of economic integration in the Americas are the Central American Common Market (CACM), the Common Market of the South (MERCOSUR), the Andean Community (CAN), the Common Market and Community of the Caribbean (CARICOM), the Pacific Alliance and the Treaty of Free Trade of North America (NAPHTHA). In this order of ideas, from the nineties to the date the concept of economic integration has expanded not only in commercial aspects but also political and social aspects. (Lombaerde, Kingah, & Rettberg, 2014). It is an example of this, the Association Agreement between Central America and the European Union (AACUE) signed on June 29, 2012, which includes not only commercial issues, but also cooperation and political dialogue. In Panama, the commercial pillar of this Agreement entered into force as of August 2013. The commercial relations between Panama and the European Union since 2013 are regulated under the commercial pillar of the AACUE. In this sense, Panama has the same conditions of access to the EU market as the countries that have a Free Trade Agreement with this economic block, because it eliminates a number of tariffs on the main products that Panama exports. It is important to mention that, before the validity of the commercial pillar of the AACUE, Panama belonged to the Generalized System of Preference (GSP +) that allowed many products not to pay tariffs when they entered the EU. So it can be said that the ACCUE (Association Agreement between Central America and the European Union) is a consolidation of the benefits of GSP (EEAS, 2016). In this research work will be characterized the evolution of trade between Panama and the European Union, analysing specifically the exports of Panama to the European Union market. The objective of this study is, in a first phase, to identify the main destination countries of Panama's exports, as well as the main products exported to the EU. And in a second phase, characterize and find explanatory factors of the differentiated behaviour or evolution of exports from Panama to the EU. To achieve the proposed objective, the Shift-Share analysis methodology will be applied to the most recent data on Panama-EU trade available in the Statistical Office of the European Communities (Eurostat), in the corresponding period between 2011 and 2016. This methodology is clearly exploratory and allows the growth of a variable to be broken down into three components: national, structural and regional. In this work, after this present introduction, a review of the main literature on Shift-Share analysis and on international trade agreements between Panama and European Union is made, then we propose the methodology to apply, after presenting the findings and discussion, ending with the presentation of the discussion and the conclusion of the research. This study intends to contribute to the development of the literature in the Panama international trade (a contribution to existing statistics on exports from Panama to the European Union) and it is especially relevant for politicians (wealth creation, economic growth, etc.) since can constitute a tool to delineate corporate or national strategies to boost trade between the two regions.

2. THEORETICAL BACKGROUND
2.1. International Trade Agreements Panama – European Union
According to the context of events that marked the trade relations between Panama and the EU, the most important were: the incorporation of Panama to the Central American Integration

System (SICA) and the signing of the Association Agreement between the European Union and Central America (ADA); This is because when Panama decides to join the SICA it accepts all the commitments reached by Central America during the negotiation of the Agreement with the European Union. It should be noted that before the signing of the AACUE, Panama belonged to the Generalized System of Preferences (GSP) of the European Union, which was established in 1971 under the recommendations of the United Nations Conference on Trade and Development (UNCTAD) with the objective of promoting the economic growth of the developing countries. The GSP allows beneficiary countries access to reduced tariffs or the total exoneration of tariffs for manufactured and semi-manufactured products exported to the European Union (Cuyvers & Soeng, 2012). For this the EU provides three schemes of commercial benefits: GSP standard, GSP+, EBA (Everything but Arms); where each of the beneficiary countries are located according to their needs. For example, Panama was located in the GSP+ scheme; which eliminates all tariffs in more than 66% of EU tariff lines (EC, 2017). The Association Agreement between the European Union and Central America is a broad inter-regional instrument that not only involved trade issues, but went further on issues of cooperation and political dialogue. The negotiations of this agreement ended on May 19, 2010 at the VI Summit of the European Union and Latin America and the Caribbean, which took place in Madrid, after 7 rounds of negotiations that began in 2007 and two technical meetings. However, the parties involved signed the Agreement on June 29, 2012 at a meeting of the Presidents of SICA in Tegucigalpa, Honduras. The Association Agreement has 8 general objectives encompassed in the first and the last one, which are: strengthen and consolidate relations between the Parties through an association based on three interdependent and fundamental parts: political dialogue, cooperation and trade, based on mutual respect, reciprocity and common interest; and encourage the increase of trade and investment between the parties, taking into consideration Special and Differential Treatment to reduce the structural asymmetries existing between the regions. The Association Agreement establishes the Association Council as an institution that supervises the fulfilment of the objectives and their application, which is formed by the representatives of the EU and representatives of each CA country; which has the power to create any subcommittee it deems necessary to fulfil its functions. It also establishes a Parliamentary association committee and a Joint Consultative Committee as an institutional framework (EEAS, 2017). As mentioned above, Political Dialogue, Cooperation and Trade are interdependent parties that constitute the fundamental pillars of the Agreement between the EU and CA.

2.2. Shift-Share Analysis

The Shift-Share Analysis was originally developed in 1942 by Daniel Creamer in his work "Shifts of manufacturing industries" (Cited in Houston, 1967). However, several other authors (Artige and Neuss, 2013; Otsuka, 2017; Fernandes, 2015; Cerejeira, 2011) maintain that the Shift-Share Analysis was developed, applied and formally introduced in 1960 by Edgar S. Dunn in his work "A statistical and analytical technique for regional analysis". This Shift-Share analysis is a descriptive statistical tool used for the analysis of economic, regional, sector, political variables, among others; that decomposes the growth or total decline of the variable in terms of national, industrial and competitive exchange effects (Matlaba, Holmes, McCann, & Poot, 2014). It responds mainly to the following question: What factors explain the X percent of the growth or decline (behaviour) of an economic variable? It should be noted that the first investigations in which the Shift-Share analysis was applied were aimed at analysing employment issues. However, over time the technique has been used to analyse tourism issues (Shi and Yang, 2008, Firgo and Fritz, 2016, Dogru and Sirakaya-Turk, 2017); electrical energy (Otsuka, 2017; Grossi and Mussini, 2018); International Trade (Markusen, Noponen and Driessen, 1991, Dinc and Haynes, 2005, Chiang, 2012); predictive purposes (Mayor, López, &

Pérez, 2005); as well as topics on agriculture, industry, specialization and competitiveness, human development index (Fernandes, 2015), regional economy, planning, economic policies, transport (Ruiz, Peña and Jiménez, 2015), among others. The success and widespread use of Shift-Share analysis is essentially due to the fact that in the first place the data required for its application are easily accessible, simple, fast and reasonable (Stevens and Moore, 1980). Second, it has low costs, is logical, analytical and easy to interpret (Chiang, 2012). Despite everything mentioned above, the technique of Shift-Share analysis since its introduction has been strongly criticized by several authors (Houston, 1967, Cunningham, 1969; Stevens and Moore, 1980; Bartels, Nicol and Duijn, 1982; Loveridge and Selting, 1998, among others) mainly arguing its limitations in: lack of theoretical support content; aggregation problems; choice of variables and the year of comparison; instability of the regional or competitive component; interdependence between the structural component and the regional component (Richardson, 1978). It is important to express that, from these criticisms many authors were motivated to make revisions that concluded in the creation of extensions, reformulations and modifications to the traditional model (Sakashita, 1973; Berzeg, 1984, Patterson, 1991; Knudsen and Barff, 1991; Haynes and Dinc, 1997; Loveridge and Selting, 1998; Dinc and Haynes, 1999; Márguez, Ramajo and Hewings, 2009; Hirobe, 2015, among others) in order to eliminate the deficiencies, achieving their best adaptation for each case applied. For example: introduction of the assignment effect (Esteban-Marquillas, 1972); introduction of the effect of regional growth and the mixing effect of the regional industry (Aracelus, 1984); incorporation of information theory (Haynes and Machunda, 1987); expansion of the traditional model to consider the international effect (Sihag and Mcdonough, 1989) and inter-regional and international trade (Dinc and Haynes, 1998); introduction of probabilistic forms (Knudsen, 2000); introduction of the spatial structure (Nazara and Hewings, 2004); and the new decomposition of the Shift-Share analysis (Artige and Neuss, 2013). The Shift-Share analysis can be represented by a graph where the axis of the abscissas represents the structural component and the one of the ordinates represents the regional component, allowing the regions under study to be classified according to the values obtained from the decomposition of their growth.
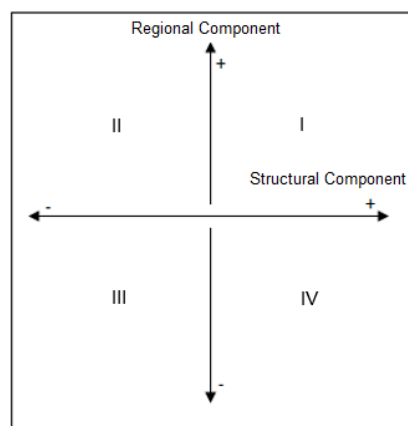

Figure 1: Graph of analysis of the Shift-Share methodology

The first quadrant (I) represents the most favourable situation: the regional effect and the competitive effect present positive values. The second quadrant (II) represents an intermediate situation: the regional effect is positive (local advantages above the average) and the competitive effect is negative (unfavourable productive specialization). The third quadrant (III) represents the most unfavourable situation: both effects are negative which means that the region is not specialized and its growth is below the national average.

Finally, the fourth quadrant (IV) also represents an intermediate situation contrary to that of the second quadrant: the regional effect is negative and the competitive effect is positive (Cerejeira, 2011).

2.2.1. Traditional Model or Static Model

In general terms for Artige and Neuss (2013) the traditional Shift-Share analysis is a decomposition technique that allows determining an industrial or structural effect and a competitive effect on the growth of an economic variable referring to the national average, in a period of time (initial year and final year). Besides being considered a technique that determines the explanatory components of the variations of an economic variable (Ruiz, Peña and Jiménez, 2015). That is, the evolution of a certain economic variable is explained by the combination of three main components: a) The effect of national growth (national component): explains that part of the variation of the economic variable is due to the growth of the national economy. Measure whether the regional variable evolves at the same pace as the national economy; b) The effect of the sector composition of the region (structural component): explains that part of the variation of the economic variable is due to the growth of specific sectors or industries. Measures the growth or decline of the industry in terms of change at the national level. (Haynes and Parajuli, 2014) and c) The effect of specific factors of the region (regional, competitive or differential component): explains that part of the variation of the economic variable is due to the growth of regional factors or influences. Measures the specific performance (growth or decrease) of the industry in the region (Haynes and Parajuli, 2014).

Adapted general formula of (2011):

$$\Sigma\Delta X_{ik} = \Sigma\left(X_{ik}^{t} - X_{ik}^{t-1}\right) = \Sigma(NX_{ik} + SX_{ik} + RX_{ik}) \qquad (1)$$

Where:

ΔX_{ik}: represents the variation observed in the variable X_{ik}.

X_{ik}^{t}: represents the economic variable X measures in the region i, in the sector k, and in the moment t.

NX_{ik}: represents the national component.

SX_{ik}: represents the sectorial or structural component.

RX_{ik}: represents the regional, competitive or differential component.

3. METHODOLOGY

In order to study the Trade Links between Panama and the EU, an analysis was made of the commercial exchange, specifically the exports, registered between Panama and each one of the 28 countries of the European Union for the period between 2011 to 2016. The data were obtained through the statistical source Eurostat (Statistical Office of the European Communities); since, the presentation format was more detailed than other existing statistical sources. The database extracted from Eurostat was built with the category of products with second-level codes, 52 products in total. However, for this study 46 were used that represented the products that Panama exported to the EU. To analyse the exchange rates of exports between Panama and each of the countries of the EU, it was decided to group the data in the following periods 2011-2013 and 2014-2016, which represent the three years prior to the Commercial Pillar of the AACUE will enter into force and the three subsequent years of its validity (the Commercial Pillar of the Association Agreement between the EU and CA came into force in Panama on August 1, 2013) and the methodology of Static Shift-Share analysis was applied.

4. DATA ANALYSIS AND FINDINGS

This section presents the results obtained from the application of the static Shift-Share analysis to evaluate the growth and rate of change of exports from Panama to the European Union for the 2011-2013 and 2014-2016 periods. At first, the behaviour of the countries of EU destination of Panama's exports was analysed as a result of the decomposition of the three components: national component (NX), structural component (SX) and regional component (RX). And secondly, the behaviour of the main products exported from Panama to the European Union was analysed in consequence also of the components mentioned above.

4.1. Descriptive Analysis

From the results obtained from the descriptive analysis of Panama's general exports to the European Union (Table 1), it is concluded that, during the period from 2011 to 2016, exports recorded an average annual growth rate of 9.23%. For the period 2011-2013 (before the validity of the AACUE), an average growth rate of 30.88% was recorded for the value of exports reached in 2014 and for the period 2014-2016 (after the AACUE) recorded an average growth rate of 14.55%. The two periods of time studied showed a growth in the value of Panama's exports; however, showed different growth rates.

Mean (Euro)	Median (Euro)	Standard Dev. (Euro)	Coefficient of Variation (%)	Maximum (Euro)	Minimum (Euro)	Mean Growth Rate (%)	Mean Growth Rate	
							2011-2013	2014-2016
511.080.991	509.173.883	110.327.274	21.59%	657.098.243	383.628.577	9.23%	30.88%	14.55%

Table 1: Descriptive analysis of Panama's exports to the EU

The Tables 2 and 3 are presented results of the analysis main destination countries and products that Panama exports to the European Union.

Countries	2011	2012	2013	2014	2015	2016	Total	%
BE - Belgium	19.323.985	55.174.254	61.364.847	72.648.833	49.894.161	7.693.888	266.099.968	8.68%
CY - Cyprus	421	4.192	30.966	16.614.214	16.548.269	34.171.366	67.373.217	2.20%
DE - Germany	56.609.810	17.794.424	40.863.980	44.993.822	51.582.490	23.810.735	235.655.261	7.68%
DK - Denmark	1.971.338	7.181.863	8.599.862	7.672.813	8.244.272	167.805.652	201.475.800	6.57%
ES - Spain	56.970.980	55.884.240	40.708.374	51.009.848	43.222.381	49.328.879	297.124.702	9.69%
FR - France	4.150.283	6.997.298	9.485.888	9.681.753	7.859.633	14.345.944	52.520.799	1.71%
GB - United Kingdom	18.214.329	20.547.349	35.446.845	22.172.741	26.931.843	32.618.514	155.931.621	5.09%
GR - Grecce	15.411.647	102.817.289	103.817.844	42.764.182	42.692.622	3.825.471	311.329.055	10.15%
IT - Italy	35.699.749	32.243.150	24.423.136	27.736.274	27.127.026	18.583.800	165.813.135	5.41%
NL - Netherlands	43.072.524	65.891.070	61.960.938	91.106.657	158.905.222	201.929.145	622.865.556	20.31%
PL - Poland	99.374.230	6.174.310	200.417.137	43.211.923	101.042.649	22.206.622	472.426.871	15.41%
SE - Sweden	26.193.662	29.553.301	14.532.874	18.108.296	17.593.715	3.937.354	109.919.202	3.58%
Other	6.631.830	10.681.168	55.445.552	6.818.178	12.163.949	16.210.081	107.950.758	3.52%
Total	383.628.577	410.943.908	657.098.243	454.539.534	563.808.232	596.467.451	3.066.485.945	100.00%

Table 2: Top EU countries destinations of Panama's exports (values in Euros).

In order to identify the main destination countries and products that Panama exports to the European Union, a first analysis of the database was carried out using the following criterion: select all countries and products (two-digit level) representing 95% of the exports of Panama and group the remaining in a category with the name of other EU countries and other products. Twelve countries and 11 products were selected, the rest of countries and products were grouped.

Eurostat Code	Products	2011	2012	2013	2014	2015	2016	Total	%
3	Other vegetables, fresh or frozen, fresh fruit	126.913.340	146.156.978	158.230.390	182.099.278	139.411.221	119.886.947	872.698.154	28.46%
12	Beverages	11.334.719	26.611.296	20.697.897	19.912.636	22.452.686	23.788.120	124.797.354	4.07%
13	Stimulants and spices	6.285.297	5.282.579	4.089.657	4.628.492	6.013.005	7.268.353	33.567.383	1.09%
14	Perishable foodstuffs	39.463.546	421.56.642	36.613.256	46.176.269	42.052.950	46.974.799	253.437.462	8.26%
17	Animal feedingstuffs and foodstuff waste	1.655.536	7.287.842	2.282.739	3.390.459	7.630.134	4.047.344	26.294.054	0.86%
18	Oil seeds and oleaginous fruit and fats	3.754.575	12.493.931	16.552.308	5.509.951	9.060.637	10.028.752	57.400.154	1.87%
91	Transport equipment	160.854.252	114.005.764	304.567.156	100.751.299	218.527.739	226.992.371	1.125.698.581	36.71%
93	Other machinery apparatus and appliances, engines, parts thereof	6.739.995	9.859.763	21.186.715	14.328.399	11.520.505	26.546.790	90.182.167	2.94%
96	Leather, textiles and clothing	6.167.860	8.345.036	7.242.049	12.639.547	14.748.099	7.784.446	56.927.037	1.86%
97	Other manufactured articles	9.325.413	13.563.631	25.000.203	40.852.128	67.814.250	90.823.265	247.378.890	8.07%
99	Miscellaneous articles	2.594.125	10.551.495	5.339.785	3.038.240	3.099.625	5.986.764	30.610.034	1.00%
-	Other	8.539.919	14.628.951	55.296.088	21.212.836	21.477.381	26.339.500	147.494.675	4.81%
	Total	383.628.577	410.943.908	657.098.243	454.539.534	563.808.232	596.467.451	3.066.485.945	100.00%

Table 3: Main products exported from Panama to the EU (values in Euros).

4.2. Application of Static Shift-Share analysis to EU countries Panama's export destinations

The Table 4 states that the destination country with the highest growth of Panama's exports was by Holland (€ 281.021.106) followed by Denmark (€ 165.896.786); Cyprus (€ 67,294,481); France (€ 11.303.208); United Kingdom (€ 7.490.239) and Germany (€ 5.193.632). On the other hand, the largest decrease was registered by Poland (€ 139.576.566) followed by Greece (€ 132.721.887); other EU countries (€ 37.566.342); Sweden (€ 30.640.423); Italy (€ 18.894.133); Spain (€ 10.029.403) and Belgium (€ 5.626.204).

Countries	Total Growth	National Component (NX)	Structural Component (SX)	Regional Component (RX)
BE - Belgium	-5.626.204	15.268.830	-7.951.384	-12.943.650
CY - Cyprus	67.294.481	4.424	54,020	67.236.037
DE - Germany	5.193.632	12.941.373	-9.331.964	1.584.223
DK - Denmark	165.896.786	2.007.869	-5.335.767	169.224.684
ES - Spain	-10.029.403	17.221.328	4.131.562	-31.382.293
FR - France	11.303.203	2.353.036	7.703.538	1.246.629
GB - United Kingdom	7.490.239	8.342.652	1.182.354	-2.034.767
GR - Greece	-132.721.887	24.949.704	-35.371.377	-122.300.214
IT - Italy	-18.894.133	10.377.672	4.906.479	-34.178.284
NL - Netherlands	281.021.106	19.199.339	101.960.693	159.861.073
PL - Poland	-139.576.566	34.403.043	-51.864.031	-122.115.577
SE - Sweden	-30.640.423	7.898.326	-5.988.204	-32.550.544
Other	-37.566.342	8.176.893	-4.095.919	-41.647.317

Table 4: Application of static Shift-Share analysis to the destination countries of Panama exports (values in Euros).

Figure 2 represents the percentage comparison of the effects of the national, structural and regional components of the static Shift-Share analysis in relation to each destination country of Panama's exports.
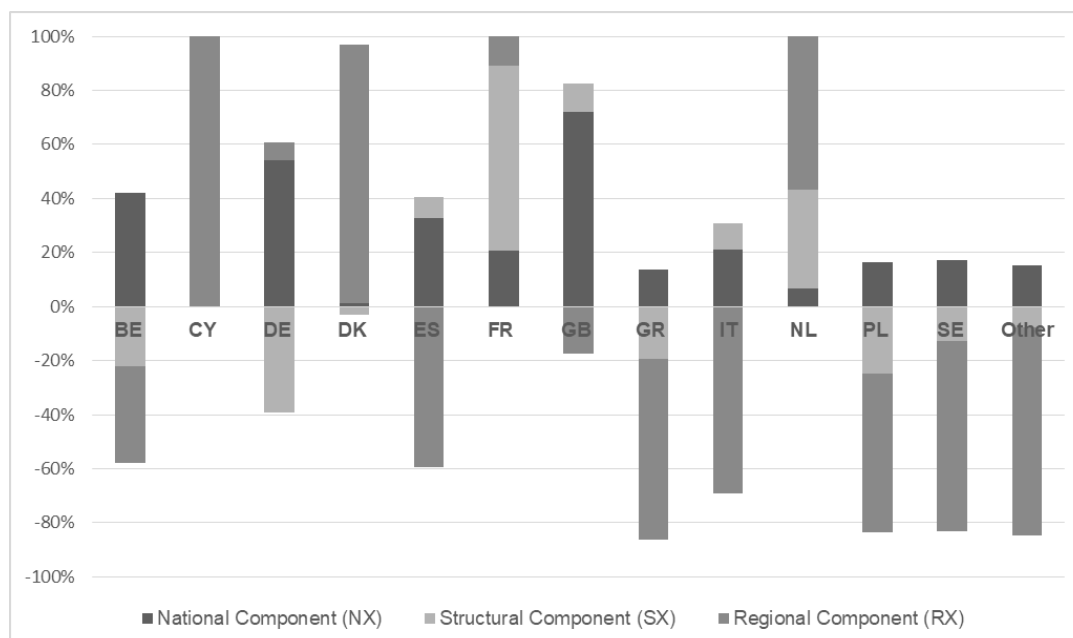
Figure 2: Components of Static Shift-Share Analysis: Panama's Export Destination Countries.

As can be seen in Figure 2, the national, structural, and regional components were positive for Cyprus, France, and Holland, contributing to the growth of Panama's exports. For Germany and Denmark, while the structural component was negative, the national and regional components were positive, contributing to the growth of Panama's exports. On the other hand, for the United Kingdom while the national and structural components were positive and contributed to the growth of Panama's exports, the regional component registered a negative value. As for the decline in Panama's exports to the EU, for Belgium, Greece, Poland, Sweden and other EU countries the national component registered positive values, the structural and regional components were negative, exports were affected by these negative contributions. In contrast, for Spain and Italy the national and structural components were positive, the regional component was negative, Panama's export to these countries was affected by that negative contribution. A positive structural component expresses the increase in exports of some or all of the products studied in this research; a negative structural component expresses a decrease in certain or all of the products studied in this research. On the other hand, a positive regional component expresses the increase of Panama's exports to a particular EU country. Or, on the contrary, a negative sign expresses that Panama's exports to a particular country have declined. Table 5 presents the results in percentages of the application of the Static Shift-Share analysis of the EU countries of Panama's export destinations. These rates were calculated by dividing the total export growth of each component of the analysis on the initial basis, in this study, Panama's exports to each of these countries in the period 2011-2013.

Table following on the next page

Countries	Exchange Rate	Nacional Component (NX)	Structural Component (SX)	Regional Component (RX)
BE - Belgium	-4,14%	11,24%	-5,85%	-9,53%
CY - Cyprus	170937,01%	11,24%	137,22%	170788,55%
DE - Germany	4,51%	11,24%	-8,10%	1,38%
DK - Denmark	928,55%	11,24%	-29,87%	947,18%
ES - Spain	-6,55%	11,24%	2,70%	-20,48%
FR - France	53,99%	11,24%	36,79%	5,95%
GB - United Kingdom	10,09%	11,24%	1,59%	-2,74%
GR - Greece	-59,78%	11,24%	-15,93%	-55,09%
IT - Italy	-20,46%	11,24%	5,31%	-37,01%
NL - Netherlands	164,50%	11,24%	59,68%	93,58%
PL - Poland	-45,60%	11,24%	-16,94%	-39,89%
SE - Sweden	-43,60%	11,24%	-8,52%	-46,32%
Other	-51,63%	11,24%	-5,63%	-57,24%

Table 5: Application of the static Shift-Share analysis to the destination countries of Panama's exports.

Table 5 shows that the national component of Panama's exports to the EU was equal to 11.24%. Cyprus is the country with the highest exchange rate, theoretically. However, this large percentage growth is due to the fact that Panama's exports to this country during the study period registered a very small initial value compared to the final value. It is assumed that the highest positive exchange rate was recorded by Denmark (928,55%) followed by the Netherlands (164,50%); France (53,99%); United Kingdom (10,09%) and Germany (4,51%). Conversely, the largest negative exchange rate was registered by Greece (59.78%) followed by other EU countries (51,63%); Poland (45,60%); Sweden (43,60%); Italy (20,46%); Spain (6,55%) and Belgium (4,14%). The Figure 3 shows the characterization, in terms of structural component and regional component, of the EU countries of Panama's export destinations in the Shift-Share analysis graph.
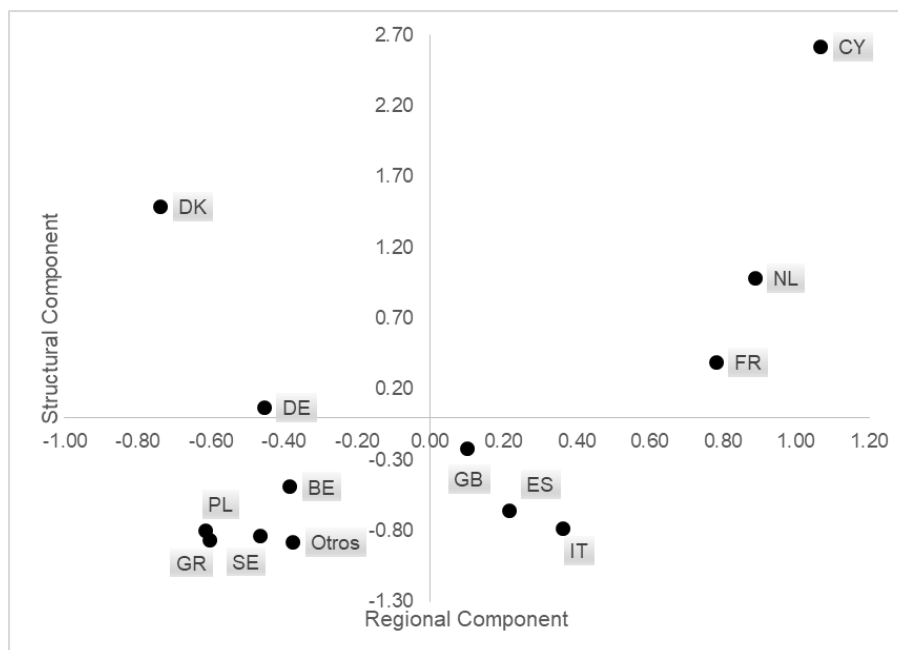

Figure 3: Static Shift-Share analysis chart for the destination countries of Panama exports (with logarithmic base 100 Scale)

In the first quadrant (most favourable situation) were Netherlands (NL), Cyprus (CY) and France (FR), where the regional component and the structural component were positive; in the second quadrant was Germany (DE) and Denmark (DK) where the regional component was positive and the structural component was negative. Belgium (BE), Greece (GR), Poland (PL), other EU countries and Sweden (SE) were both in the third quadrant (most unfavourable situation), both components were negative. Finally, in the fourth quadrant Spain (ES), Italy (IT) and United Kingdom (GB) were located, where the regional component was negative and the structural component was positive. In summary, with the application of static Shift-Share, it was obtained that for the periods 2011-2013 and 2014-2016 Panama's exports registered a decrease to destination countries as: Belgium, Spain, Greece, Italy, Poland, Sweden and others countries. And they registered a growth to countries destinations like: Germany, Cyprus, Denmark, France, Holland and United Kingdom.

4.3. Static Shift-Share analysis applied to products exported by Panama to the EU
The Table 6 presents the results of applying static Shift-Share analysis to the products exported by Panama to the EU. It was noted that the highest growth was recorded by other manufacturing articles (€ 151.600.396) followed by perishable foods (€ 16.970.574); other appliances and machinery (€ 14.609.221) leather, textiles and clothing (€ 13.417.146); other fresh and frozen vegetables, fresh fruit (€ 10.096.738); beverages (€ 7.509.530); animal feed and animal waste (€ 3.841.820) and stimulants and species (€ 2.252.317). Conversely, the largest decrease was recorded by transport equipment (€ 33.155.763) followed by the grouping of other products (€ 9.435.241); oilseeds and oil fats (€ 8.201.474) and miscellaneous items (€ 6.360.776).

Eurostat Code	Products	Total Growth	National Component (NX)	Structural Component (SX)
3	Other vegetables, fresh or frozen, fresh fruit	10.096.738	48.471.277	-38.374.539
12	Beverages	7.509.530	6.590.634	918.896
13	Stimulants and spices	2.252.317	1.759.655	492.662
14	Perishable foodstuffs	16.970.574	13.287.541	3.683.033
17	Animal feedingstuffs and foodstuff waste	3.841.820	1.261.635	2.580.185
18	Oil seeds and oleaginous fruit and fats	-8.201.474	3.686.285	-11.887.759
91	Transport equipment	-33.155.763	65.118.314	-98.274.077
93	Other machinery apparatus and appliances, engines, parts thereof	14.609.221	4.246.593	10.362.628
96	Leather, textiles and clothing	13.417.147	2.444.907	10.972.240
97	Other manufactured articles	151.600.396	5.381.983	146.218.413
99	Miscellaneous articles	-6.360.776	2.077.463	-8.438.239
-	Other	-9.435.241	8.818.202	-18.253.443

Table 6: Application of static Shift-Share analysis to products exported by Panama to the EU (Values in Euros).

The Figure 4 represents the percentage comparison of the effects of the national, structural and regional components of the static Shift-Share analysis in relation to each product exported from Panama to the EU.
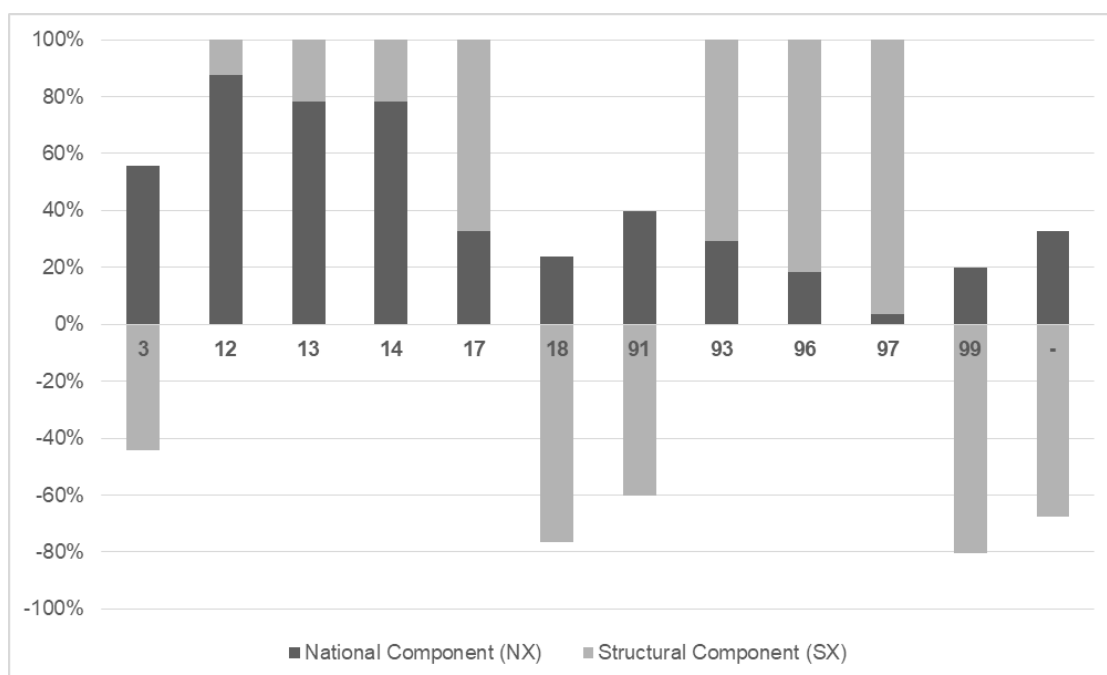

Figure 4: Static Shift-Share analysis components: products exported by Panama to the EU.

As can be seen in Figure 4, for beverages; stimulants and species; perishable foods; animal feed and animal waste; other machinery and apparatus; leather, textiles and clothing and other manufactured goods, the national and structural components were positive, contributed to the growth of Panama's exports. For other fresh and frozen vegetables, fresh fruits the national component was positive, contributed to the growth in its export, although the structural component was negative. With regard to the decrease of the products exported by Panama to the EU; oilseeds and oleaginous fats, transport equipment, miscellaneous items and other products recorded a negative structural component. It should be noted that a positive structural component expresses the increase of a certain product exported by Panama to the EU and a negative structural component expresses a decrease of a certain product exported by Panama to the EU. For this analysis the regional component was not considered because the exports of a product to several regions registered increases (positive sign) or decreases (negative sign), which makes the sum of that product for several countries equal 0. That is, the exports of a product in the national component are above or below average. The Table 7 presents the results in percentages of the application of the static Shift-Share analysis of the products exported by Panama to the EU. These rates were calculated by dividing the total export growth of each component of the analysis on the initial basis, in this study, the exports recorded by each of the products in the period 2011-2013. In the following table it was observed that the national component of Panama's exports to the EU was equal to 11,24%. It was found that the highest exchange rate was recorded by the Eurostat 97 product: other manufacturing products (316,56%) followed by leather, textiles and clothing (61,67%); other apparatus and machinery (38,66%); animal feed and animal waste (34,22%); stimulants and species (14,38%); perishable foods (14,35%); beverages (12,81%) and other fresh and frozen vegetables, fresh fruits (2,34%). Conversely, the largest negative exchange rate was recorded for miscellaneous items (34,41%) followed by oilseeds and oilseeds (25,00%); the grouping of other products (12,02%) and transport equipment (5,72%).

Eurostat Code	Products	Exchange Rate	National Component (NX)	Structural Component (SX)
3	Other vegetables, fresh or frozen, fresh fruit	2,34%	11,24%	-8,90%
12	Beverages	12,81%	11,24%	1,57%
13	Stimulants and spices	14,38%	11,24%	3,15%
14	Perishable foodstuffs	14,35%	11,24%	3,12%
17	Animal feedingstuffs and foodstuff waste	34,22%	11,24%	22,98%
18	Oil seeds and oleaginous fruit and fats	-25,00%	11,24%	-36,24%
91	Transport equipment	-5,72%	11,24%	-16,96%
93	Other machinery apparatus and appliances, engines, parts thereof	38,66%	11,24%	27,42%
96	Leather, textiles and clothing	61,67%	11,24%	50,44%
97	Other manufactured articles	316,56%	11,24%	305,33%
99	Miscellaneous articles	-34,41%	11,24%	-45,65%
-	Other	-12,02%	11,24%	-23,26%

Table 7: Application of static Shift-Share analysis to products exported by Panama to the EU.

The Figure 5shows a representation of the structural component of static Shift-Share analysis: products exported by Panama to the EU.
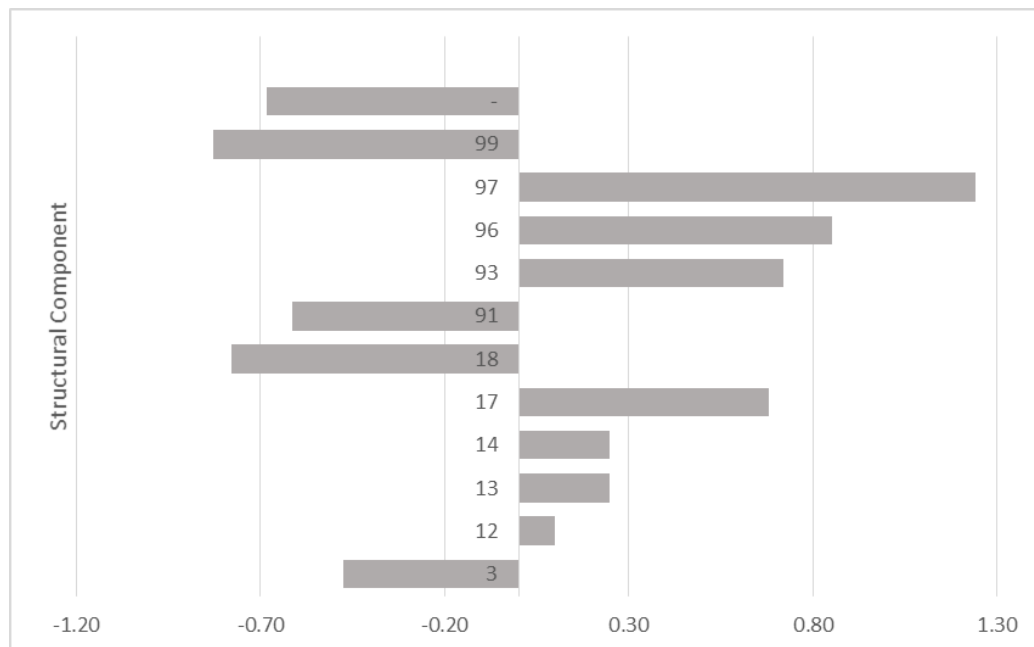

Figure 5: Structural component graph of the static Shift-Share analysis for exported products (with logarithmic base 100 Scale)

In the Figure 5 it is observed that the product with the highest contribution in the structural component was: other manufactured articles, followed by other products; leather, textiles and clothing; other machinery and apparatus; animal feed and animal waste; stimulants and species; perishable foods and beverages. Conversely, the product with the lowest contribution in the structural component was recorded by crude oil, followed by miscellaneous items; oilseeds and oleaginous fats; transport equipment and other fresh and frozen vegetables, fresh fruit.

5. DISCUSSION AND CONCLUSIONS

The principal aim of this research was to identify the main destinations and products of Panama's exports to the EU. As well as characterizing and finding explanatory factors for the evolution of Panama's exports over the period 2011 to 2016, using statistical information available from the Statistical Office of the European Communities (Eurostat), and through the application of the model traditional Shift-Share analysis. From the results obtained from the descriptive analysis of Panama's general exports to the European Union, it is concluded that, during the period from 2011 to 2016, exports recorded an average annual growth rate of 9.23%. For the period 2011-2013 (before the entry into force of the CAAEC), an average growth rate of 30.88% was recorded for the value of the exports reached in 2014 and for the period 2014-2016 (after the AACUE) recorded an average growth rate of 14.55%. That is, Panama's exports to the EU declined after the CAAA was in force. Panama has not made significant use of the benefits of this agreement. On the other hand, it is concluded that the destination countries that represent 96.48% of the exports were: Germany, Belgium, Cyprus, Denmark, Spain, France, Greece, Netherlands, Italy, Poland, United Kingdom and Sweden. And the products that represent 95.19% of the exports were: transport equipment, others vegetables, fresh or frozen, fresh fruit; beverages; stimulants and spices; perishable foodstuffs; animal feeding stuffs and foodstuff waste; oil seeds and oleaginous fruit and fats; other machinery apparatus and appliances; leather, textiles and clothing; other manufactured articles and miscellaneous articles. Relative to the application of the static Shift-Share analysis, it was possible to know that Panama's exports from 2011 to 2016 to Cyprus, Denmark and the Netherlands registered growth mainly due to the regional component (growth of exports from Panama to that country); France recorded growth due to the effects of the structural component (growth in products exported by Panama); Germany and the United Kingdom recorded growth due to the effects of the national component (growth of exports to the EU). On the other hand, Panama's exports declined in Belgium, Spain, Greece, Italy, Poland and Sweden due to regional effects. As for the products exported by Panama to the European Union, it can be stated that other fresh and frozen vegetables, fresh fruits; drinks; stimulants and species; perishable foods recorded growth because of the effects of the national component. Animal feed and animal waste; other machinery and apparatus; leather, textiles and clothing and other manufacturing items registered growth due to the effects of the structural component. Finally, oilseeds and oil fats; transport equipment and miscellaneous items registered a decrease due to the effects of the structural component. In summary, according to the static Shift-Share analysis, Panama's exports to the European Union were affected by decreases in exports to countries such as Belgium, Spain, Greece, Italy, Poland, Sweden and other EU countries. And by the decrease of the exports of the following products: oil seeds and oleaginous fruit and fats, transport equipment, miscellaneous articles and other. Furthermore, the pace of growth between the years before and after the signing of the ACCUE experienced a slowdown. Most of the exports are concentrated in only 12 countries out of the 28 that make up the EU. Most of the products exported to the EU could be of re-export origin because they are not produced in Panama. And finally, that Panama makes more imports from the EU than exports to the EU. However, it is considered that since the entry of AACUE, imports into Panama from the EU have declined and, as mentioned above, Panama's exports to the EU have continued to grow. To this extent, it can be said that the validity of the trade pillar of the AACUE has allowed to balance Panama's trade balance. Despite the fact that Panama has rich soils for agriculture, infrastructure, equipment and labour for the production of goods and services not only to meet the demands of the domestic market but also the international market stops at just keeping what is and unnecessarily import goods and services that are already owned rather than exploited. In the same manner, it can be said that people (associations, entrepreneurs, etc.), and especially the government, do not have innovative strategies and programs to promote exports, for example

support to the Panamanian agro-industry which is one of the products that can be exported to the EU. In summary, it can be said that in Panama, exports are not seen as a priority / opportunity despite the resources and infrastructure that are unequalled compared to the Central American region. It is therefore important to suggest increasing the production and processing of products of interest to the countries that make up the EU and, in that sense, to take advantage of the market that was opened by the EUCI. In addition, this work is presented as a contribution to existing statistics on Panama's exports to the European Union and it can be used a tool for delineating corporate or national strategies to boost trade between two regions.

Projeto POCI-01-0145-FEDER-008540

LITERATURE:
1. Aracelus, F. J. (1984). An Extension of Shift Share Analysis. Growth and change, 15(1), 3-8.
2. Artige, L., & Neuss, L. (2013). A New Shift-Share Method. Growth and Change, 45(4), 667-683.
3. Cerejeira, J. (2011). A Análise de Componentes de Variação (Shift-Share). En J. S. Costa, T. P. Dentinho, & P. Nijkamp, Compêndio de Economía Regional, Vol. II - Métodos e técnicas de análise regional (págs. 65-78). Princípia.
4. Chiang, S.-H. (2012). Shift-share analysis and international trade. The Annals of Regional Science,, 1-18.
5. Cuyvers, L., & Soeng, R. (2012). El Impacto de los cambios en el Sistema Generalizado de Preferencias de la Unión Europea en países Asiáticos y Latinoamericanos. Cuadernos de Economía, 31(57), 65-85.
6. Dinc, M., & Haynes, K. E. (1998). International Trade and Shift-Share Analysis: A Specification Note. Economic Development Quarterly, 12(4), 337-343.
7. EC. (2017). European Commision. Recuperado el 29 de Noviembre de 2017, de Generalised Scheme of Preferences (GSP): https://goo.gl/1gsQ5a
8. EEAS. (2017). European External Action Service. Recuperado el 19 de Diciembre de 2017, de Versión en Español del AdA: https://goo.gl/rtxiD7
9. Esteban-Marquillas, J. M. (1972). A reinterpretation of shift-share analysis. Regional and Urban Economics, 2(3), 249-255.
10. Fernandes, A. (2015). Dinâmicas Recentes Nas Sub-Regiões Portuguesas: Uma Aplicação do método Shift-Share. Revista Portuguesa de Estudos Regionais, 38, 59-70.
11. González, J., Moreno, L., & Rodríguez, M. (2015). La Integración y sus convenios Internacionales en America Latina. Económica CUC, 2(36), 79-94.
12. Haynes, K. E., & Machunda, Z. B. (1987). Considerations in Extending Shift-Share Analysis. Growth and Change, 18(2), 69-78.

13. Haynes, K. E., & Parajuli, J. (2014). Shift-Share analysis: descomposition of spatially integrated systems. En R. J. Stimson, Handbook of Research Methods and Applications in Spatially Integrated Social Science (págs. 315-344). Edward Elgar Publishing, Inc.
14. Houston, D. B. (1967). The Shift and Share Analysis of Regional Growth: A Critique. Southern Economic Journal, 33(4), 577-581.
15. Knudsen, D. C. (2000). Shift-share analysis: further examination of models for the description of economic change. Socio-Economic Planning Sciences, 34, 177-198.
16. Lombaerde, P. D., Kingah, S., & Rettberg, A. (2014, Mayo-Agosto). Presentación: Procesos de integración política, social y económica. Colombia Internacional(81), pp. 19-24.
17. Matlaba, V. J., Holmes, M., McCann, P., & Poot, a. J. (2014). Classic and Spatial Shift-Share Analysis of State-Level Employment Change in Brazil. Applied Regional Growth and Innovation Models, 139-172.
18. Mayor, M., López, A., & Pérez, R. (2005). Escenarios de empleo regional. Una propuesta basada en análisis shift-share. Estudios de economía aplicada., 23(3), 863-887.
19. Nazara, S., & Hewings, G. J. (2004). Spatial Structure and Taxonomy of Decomposition in Shift-Share Analysis. Growth and Change, 35(4), 476-490.
20. Richardson, H. W. (1978). The state of regional economics: a survey article. International regional science review, 3(1), 1-48.
21. Ruiz, J., Peña, A. R., & Jiménez, M. (2015). Análisis de la competitividad de las exportaciones agroalimentarias españolas a nivel regional ante la crisis actual. Revista de Estudios Regionales, 101, 71-99.
22. Sihag, B. S., & Mcdonough, C. C. (1989). Shift-Share Analysis: The International Dimension. Growth and Change, 20(3), 80-88.
23. Stevens, B. H., & Moore, C. L. (1980). A critical review of the literature on shift-share as a forecasting technique. Journal of Regional Science, 20(4), 419-437.